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ORIGINAL ARTICLES.

A CASE OF GASTROTOMY FOR THE REMOVAL OF HAIR-BALL—RECOVERY.

Read at the Quarterly Meeting of the Iowa and Illinois Central District Medical Society, Jan. 9, 1896.

BY WM. L. ALLEN, M.D.
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The case I report is not only unique as regards the character of the foreign body found, but instructive from a physiologic standpoint, showing as it does the remarkable ability of the stomach to digest food in sufficient amount to maintain a fair degree of health, even under the most trying conditions.

Case.—Maggie Heinz, aged 16, was brought to me in November last by Dr. De Armand. She stated that she had felt a tumor in the region of the stomach for the past six months; felt more or less pain after eating, vomited frequently, lost weight during the last twelve months and had frequent attacks of diarrhea followed by constipation.

Further questioning elicited very little history that would throw light upon the case. Examination revealed a tumor in the epigastric region, oval in form and movable several inches to the right or left; it was as hard as bone at the right extremity, apparently, but painless on moderate pressure.

Vaginal examination revealed normal condition of pelvic organs; her age, condition and the trivial symptoms manifested, precluded the thought of a malignant tumor of such size and rapidity of growth. The extreme hardness at the right border precluded the diagnosis of a floating kidney or spleen, consequently I advised that an exploratory laparotomy be made to determine the character of the tumor and the removal of same if found feasible. She consented to this and was admitted to St. Luke's Hospital on November 23.

On November 25, assisted by Drs. Crawford, Hagebocck and De Armand, I made an incision in the median line between the ensiform cartillage and the umbilicus, and after opening the abdominal cavity found the stomach presenting directly beneath the incision, the entire viscus being compromised by the tumor. On grasping the stomach it was at once seen that it contained a foreign body which completely filled the cavity, and which appeared to be nine or ten inches in length and very hard at the pyloric end. The abdominal incision was then extended below the umbilicus in order to give ample room, and the stomach with the contents drawn through the incision.

An opening in the stomach was then made parallel to the greater curvature and passing nearly to the cardiac extremity. The muscular wall was found to be about three times the normal thickness and the mucous layer was likewise thickened greatly. On opening the latter the tumor was found to be a mass of hair completely filling and distending the stomach, and it was necessary to carry the incision still farther toward each extremity, about five inches in all, and the mass was with difficulty brought through the gastric incision. A very little mucus escaped through the wound. The mucous membrane was united with a continuous silk suture and the serous coat with sixteen Lembert sutures, also of silk.

The patient vomited once while the mucous layer was being sutured. The stomach was found free and very clean. After removing the hair-ball there was no escape of any contents into the abdominal cavity. The abdominal wound was united with silk and the operation completed in one and one-half hours.

There was no shock following the operation; on the contrary the patient recovered from the effects of the ether almost the moment she was in bed. She vomited and was given a hypodermic injection of one-half grain of codein at noon, and again at night. Temperature two hours previous to operation was 99 4-5; at 6 P.M. it was 101; at 9 P.M. it was 100 1-5; pulse 116.

November 26 she slept well. Temperature at 6 A.M. was 98. Later it rose to 99 4-5 and then dropped in the evening to 98 3-5; pulse 103. At 6 P.M. she was given six oz. pep. milk per rectum; nothing by the mouth.

November 27, temperature at 6 A.M. was 98; pulse 98. At 6 P.M. temperature 100; pulse 79. She was given rectal injections of liquid peptonoids, which she retained, while the milk was expelled.

November 28 she slept well; retained liquid peptonoids per rectum given every eight hours. Pulse 70; temperature ranging from 98 to 99.

November 29 she slept well. Pulse 70; temperature 98. From this time on temperature remained at or below normal; pulse slow. Bowels moved every second day by enema.

December 1 she was given pep. milk by the mouth and complained of hunger. December 2, stitches were removed, union being perfect. December 9 she sat up. December 10 she was given solid food; no discomfort, but still hungry. December 20 she was discharged cured.

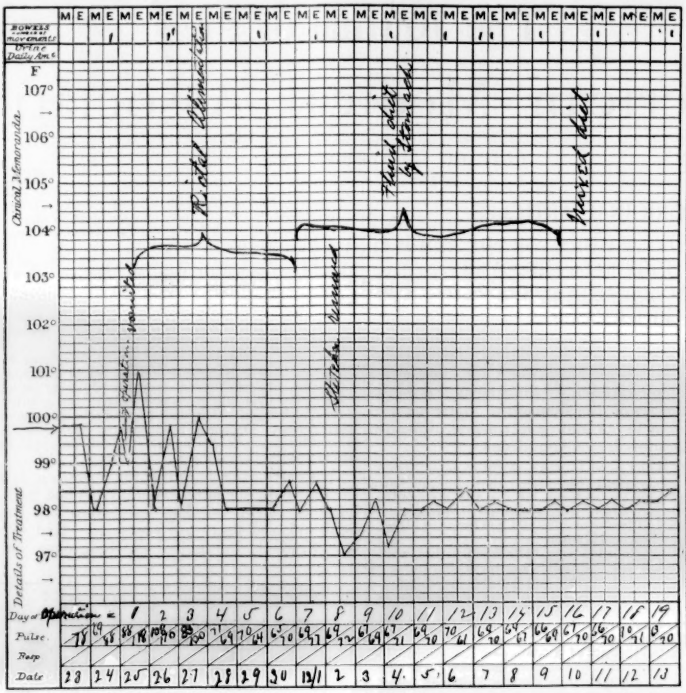
On questioning her after the operation as regards the hair-ball, she admitted that she had been in the habit of eating her hair ever since she was three years old, and up to two years ago. Had either bitten off, pinched or pulled out long ones, which she

HAIR-BALL REMOVED FROM STOMACH.

rolled around her finger into a ball or loop and then swallowed; for the last five or six years she remembers to have felt the tumor which seemed to remain about same size as when it was first noticed. The appearance of the foreign body is shown by the photograph herewith.

Its dimensions are as follow: Diameter, cardiac to pyloric extremity, 9½ inches; entire length including duodenal part, 17 inches; circumference at pyloric extremity, 8½ inches; circumference at greater curvature, 8½ inches; circumference at cardiac extremity, 5½ inches.

The first authentic case of gastrotomy was done successfully 1602, by Florian Matthis of Prague removing a knife from the stomach of a juggler and since that time, so far as I can find from the records, there have been thirty-eight cases, with thirty recovered, six deaths, and two uncertain. There have undoubtedly been other cases and very likely more unfavorable ones are missing. There are also several



cases recently of gastrotomy as a means of entering the esophagus, with two very interesting cases reported by Richardson and Bull.

HISTORICAL.

1. 1602, Mathis, Prague, knife, recovery.
2. 1635, Schwabe, Königsberg, knife, recovery.
3. 1692, Wesener, Halle, knife, recovery.
4. 1720, Hubner, Rustenburg, knife, recovery.
5. 1786, Frizac, Toulouse, knife, recovery.
6. 1819, Cayroche, knife, recovery.
7. 1822, Reynaud, Grenoble, knife, recovery.
8. 1823, Bertherand, spoon, recovery.
9. 1836, Fideli, Riva, fork, recovery.
10. 1848, Tilanus, Leiden, fork, death.
11. 1855, Bell, Davenport, bar of lead, recovery.
12. 1856, Gluck, laryngeal probang, death.
13. 1856, unknown, fork, recovery.
14. 1857, Bouchet, Lyons, fork, result unknown.
15. 1858, Hohlbeck, Wodkinsk, fork, death.
16. 1875, Labbe, fork, recovery.
17. 1880, Fleury, S. America, fork, recovery.
18. 1880, Bille, sponge and wire, death.
19. 1880, Felizet, spoon, recovery.
20. 1882, Hashimoto, Japan, tooth-brush, recovery.
21. 1882, Schönborn, Königsberg, hair-ball, recovery.
22. 1883, Kocher, Berne, probang, recovery.
23. 1883, Güssenbauer, Prague, sword blade, death.
24. 1883, Thornton, London, hair-ball, recovery.
25. 1883, Gerard, Bourgueil, a piece of wood, recovery.
26. 1885, Billroth, Vienna, set of teeth, recovery.
27. 1885, Credi, Dresden, set of teeth, recovery.
28. 1886, Bernays, St. Louis, knife, recovery.
29. 1886, Polaillon, Paris, fork, recovery.
30. 1886, Richardson, Boston, set of teeth in esophagus, recovery.
31. 1887, Bull, New York, stone in esophagus, recovery.
32. 1887, Loretta, Bologna, needle, recovery.
33. 1888, Berg, Stockholm, hair-ball, recovery.
34. 1889, Witte, Mt. Pleasant, fork, recovery.
35. 1889, Lowson, Bath, skewer, result unknown.
36. 1891, Richardson, Boston, safety-pin, recovery.
37. 1893, Cant, Lincoln, razor, death.
38. 1885, Allen, Davenport, hair-ball, recovery.

Total 38 cases; recoveries 30; deaths 6; unknown 2. The foreign bodies were found to be as follows: Forks 11 cases; knives 6 cases; hair-balls 4 cases; set of teeth 3 cases; spoons 2 cases; probangs 2 cases; needles or pins 2 cases; peach-stone 1 case; tooth-brush 1 case; piece sword blade 1 case; sponge and wire 1 case; skewer 1 case; piece of wood 1 case; bar of lead 1 case; razor 1 case.

Instances of hair-ball I find recorded as follow: In 1882, Schönborn, Konigsberg, reported to congress of German surgeons at Berlin a case of gastrotomy for the removal of hair-ball from a young girl. She had been in the habit of biting off her hair. A tumor was found in the left side of the abdomen and was supposed to be either spleen or floating kidney.

In 1883 Knowsley Thornton, London, reported a similar case in a girl of 17 who was in the habit of swallowing the combings of her hair, from whom he removed a mass nine inches long.

In 1888 John Berg reported having removed a hair tumor from a patient in Stockholm. An exploratory operation was made and the mass found in the

stomach, which was opened and the hair removed in pieces. The patient denied having swallowed any hair since childhood. All of these cases recovered.

In 1891 Von Bollinger reports the case of a girl of 16 years who complained for three or four years of pain and vomiting, which so increased that she died. Before death, however, the tumor was discovered and a malignant growth of stomach was diagnosed. The autopsy revealed the stomach and duodenum very much enlarged, being about twenty inches in length, packed with hair, which extended down to the duodenum, resembling in shape the specimen now before you which also extended some three inches into the duodenum and is nine and one-half inches in its longest diameter and weighs one pound, seven and one-half ounces.

Poulet (Foreign bodies in Surgery, N.Y., 1880) gives the following cases not enumerated above: 1602, Crollins, knife; 1613, Guenther, penknife; 1635, Shoval, knife, 6½ inches long.

A surgeon-major at Nimes, Fr., spoon. Duplay and Reclus (Traité de chirurgie, 7. vi., Paris, 1892) give the following additional cases: 1889, Terrier, fork; 1889, Périer, teaspoon; 1891, Heydenreich, spoon.

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HIGHER EDUCATION FOR PHARMACISTS.

Read in the Section on Materia Medica and Pharmacy, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY PROF. JOSEPH P. REMINGTON.

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The AMERICAN MEDICAL ASSOCIATION has a deep interest in the education of the pharmacist; with improved methods and extended courses in the great medical schools, with the practices of medicine and pharmacy ever widening and developing, it must follow that better education for the pharmacist and more of it is imperatively demanded.

The first organized effort in America to instruct those who had entered the drug business resulted in the establishment of the Philadelphia College of Pharmacy in 1821; since then colleges have been established in New York, Baltimore, Boston, Brooklyn, Buffalo, San Francisco, Chicago, Cincinnati, Cleveland, Kansas City, Louisville, Toronto, Montreal, Washington, Pittsburg, St. Louis, Iowa City, St. Paul, Lawrence (Kan.), Ann Arbor (Mich.), Madison (Wis.), Atlanta, Albany, Newark, Columbus, Ada (Ohio), Lebanon (Ohio), Lafayette (Ind.), Richmond, Scio (Ohio), New Orleans, Nashville and Detroit. The first years of all of these institutions were struggles for existence; the difficulties which were encountered were serious, and if it had not been for a little band of faithful, self-sacrificing friends of education, the efforts would have died from lack of appreciation. In looking back to these early days and in considering the educational work of the present, one remarkable fact stands out so prominently that it can not be overlooked—the elevation of pharmacy has been due almost entirely to the unaided efforts of pharmacists themselves, for the desire for self-improvement has been the motive which gave life in the early struggles and which to-day successfully supports the work.

Seventy-five years ago, all that was deemed necessary to qualify one to practice pharmacy was a certain number of years apprenticeship to the owner of a shop who had acquired his knowledge as he best could, by picking it up from an older person and from the few books which were then accessible. It is a surprising fact that not a single college has ever been endowed, and up to the present time practically nothing in the way of bequests from philanthropic friends of education has been received for these colleges. They are supported almost entirely by the fees of the students, and none of these students are compelled to enter the colleges to acquire an education, but attend solely because they realize the value of systematic technical knowledge in aiding them in the practice of their profession. Millions of dollars have been poured into the coffers of the great universities and medical schools to carry on their work, by public spirited citizens, and State aid is often secured for them, but while every one must recognize that general education is of the highest importance in developing our race, it is an astounding fact that pharmacy, which every one admits demands education of a special character and of a high order, has been left without any material assistance from public-spirited citizens outside of the profession itself; and this in the face of the evident proposition that this special education is primarily for the security of the public and the saving of human life.

The public mind is filled with horror and the editorial ink of the newspapers of the land is lavishly spent, when an unfortunate error in compounding a prescription sacrifices a life. But in the writer's knowledge never once has the editor of a public paper advocated the endowment of institutions of learning for the education of those members of the community into whose hands the safety of the lives of the public is committed. At the present time the buildings, property and equipment of the forty educational institutions for teaching pharmacy amount to several million dollars, and the credit for establishing and carrying forward this work must be given to whom it belongs, "the pharmacists themselves."

Of late years, pharmacy laws have been passed in nearly every State in the Union, but these laws differ in one essential particular from those which guard the practice of medicine. In the latter case the State board of medicine compels the candidate to show evidence that he has been systematically educated in a medical college, by requiring him to produce a diploma and then forcing him to pass an examination before a State board, but no pharmacy law has ever been passed in this country which compels a pharmacist to be a graduate of a college of pharmacy, before passing an examination. The pharmacist is permitted to practice and conduct a drug-store, if he passes successfully a State board examination. In some of the States these examinations are of a most trivial and imperfect character, and this condition of affairs has resulted in giving a legal standing to a large majority of those practicing pharmacy to-day, who have never been systematically educated at a college or university, and many of those who once secure their license to practice from the State board, stop there and never take the time, nor undergo the expense of obtaining a college diploma; in other words "they get as little as the law allows." But notwithstanding these adverse circumstances, the colleges of pharmacy are crowded and the facilities of many taxed to the utmost to give their students as thorough an education as is possible, thus proving

that the better class acquire knowledge solely for its recognized value. When the colleges in their early days were hampered by lack of means and by the struggle for existence, many of the apprentices were encouraged by their preceptors to stay away from the colleges, because of the argument that the preceptor could teach them more pharmacy behind the counter, than the college professor could from the lecture table; but this idea, although still prevalent in some localities, has largely given way since the colleges have proved their "reason for being" through the results which have been accomplished, and the student himself now feels that he can acquire a better knowledge of the underlying principles of his profession by availing himself of systematic instruction in the colleges, and moreover by supplementing this by drug-store experience. The immense additions to the materia medica and the enormous exploiting of new remedies have largely added to this condition, and we thus have an explanation of the general prosperity of these institutions. But there has also come with this, a deeper sense of responsibility on the part of the colleges and a sure determination to broaden and strengthen the foundation and to add to the superstructure, while at the same time demolishing that which has become superannuated or has outlived its usefulness.

In the demand for higher education it must ever be recognized that thoroughness in the essentials must never be sacrificed, and hence better methods for grounding the student in the underlying principles of every day practice have the first care. Renewed attention is continually directed toward preliminary education. The key to this subject is unquestionably found at the very beginning. The practice of pharmacy fortunately permits the acquiring of pharmaceutic knowledge during the novitiate of the student; the student of pharmacy has a great advantage in being able to labor at his profession, not only between the college courses, but while in actual attendance upon the lectures, and much instruction can be obtained from an intelligent and willing preceptor; and although the college may afford all of the facilities at its disposal, the daily and hourly contact with the preceptor exercises an influence for life upon the plastic mind of the tyro. The importance of only engaging such assistants, as have already shown that they possess a good English education, is of the utmost value. While it is true that we may have embryo Elihu Burritts still in existence, they must ever prove the exception and the preceptor who stamps his own individuality upon his assistants must see to it that the material which he is to mold and fashion should be suitably prepared to receive the instruction. If this be not done, the student entering college and mingling with his fellows is seriously handicapped, if not absolutely discouraged, by the difficulty of beginning a work late in life which should have been completed before entering a pharmacy.

The pharmacist must ever be the intelligent coadjutor of the physician, and yet it is recognized that preliminary education is the burning question in our medical schools, and is even of greater importance in this connection. In the higher education of the colleges of pharmacy laboratory instruction plays an important part, and it is in this direction that the future looks most promising. It is not intended by this to convey the impression that didactic instruction should be superseded, for there are a multitude of facts in pharmacy which can be impressed upon the minds of a hundred students at one time in the hearing of all, just as easily as upon one personally in the laboratory, but when didactic instruction is supplemented by the practical and personal performance of technical work in the laboratory, the significance of facts is vastly enhanced, and a familiarity in the actual handling of apparatus is secured.

The extension of college work to three full courses extending over three years has now become necessary to adequately embrace the consideration of all the greatly extended subjects of the lectures, and laboratory courses.

The physician who looks upon the druggist merely as a purveyor of drugs and considers that his duty is fulfilled when he can simply supply patients with the medicine that he has prescribed, will doubtless in the future awake to the fact that he can call upon an intelligent pharmacist to originate a special preparation in order to combat a certain disease; to analyze various products which have given unsatisfactory results, to accurately perform urine analysis, or to make a microscopic investigation which will lead to important results. Thousands of pharmacists to-day possess the necessary qualifications to thus aid the physician, and with the hearty assistance of the medical profession in the true scientific spirit of recognizing truth wherever it is found and in that broad liberality which casts aside prejudice and preconceived notions, the higher education of the pharmacist must be eagerly welcomed by the lovers of real progress in the medical profession.

INTRODUCTION OF LEPROSY INTO NOVA SCOTIA AND THE PROVINCE OF NEW BRUNSWICK. MICMACS IMMUNE.

BY ALBERT S. ASHMEAD, M.D.
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Mr. Stansbury Hager, in an article entitled "Micmac Customs and Traditions," in the *American Anthropologist*, January, 1895, suggests the possibility of some connections between the Micmac tribes of Nova Scotia and the Mayas; these are the pre-Columbian game of Woltëstŏmkwon, and the peculiar signification for the division of time of certain numbers in the same game, with both nations. There is also the signification of the arrow in this same game, among the Tiahuancos of Bolivia and in the myth of the Navajo story of the Apaches. Similar mystic resemblances are found in the serpent dances and the Pleiades of these different nations, in Yucatan, Peru, Mexico, etc.

In a note to my article "Pre-Columbian Leprosy" (JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, April, May, June, 1895), I suggested the possibility of an Indian migration from the Southwest, and intimated that if leprosy was pre-Columbian in Mexico and Peru, the leprosy of the Northeast might have its origin by immigrations from the Southwest of North America.

Speaking of this note, Mr. R. G. Haliburton, the well-known authority on the Micmacs, and founder of the Nova Scotia Institute of Science, says:

There is no connection between the Mayas and the Micmacs What may have been regarded as some evidence was even more applicable to three-fourths, or rather nine-tenths of the North-

ern tribes. . . . I never heard that there was leprosy among the Micmacs. Still, that does not in the least prove it does not exist. But it does among the Acadians who live on or near the Bay de Chaleur at the mouth of the river St. Lawrence. You of course know the lazaretto at Tracadie, New Brunswick.

Strange to say, there are more lepers among the Acadians in Louisiana than any other race of their numbers. There are also a certain number of idiots, which may indicate a racial degeneracy. You have perhaps seen my paper on "Survivals of Dwarf Races in America." I suggest that idiocy among the Mexican dwarfs and those of the Pyrenees is the result of a race dying out, a race of hunters no longer able to get flesh food.[1]

I also find among the Louisiana Acadians, that in Old French (perhaps it is so in modern French) the word cretin has no significance connected with goitre. It is a contemptuous word meaning merely a dwarf in mind and body—a stupid little man.

I may add that the Acadians are smaller than the people of Quebec, many of them not exceeding five feet in height. I have never heard that leprosy has been found in the Province of Quebec. But my ignorance on that point argues nothing, as I have never specially looked into the point, a *sine qua non* for an opinion worth anything.

Negative evidence in such matters is almost worthless. I do not think there is leprosy among the cretins of the Alps or Pyrenees.[2]

But cretinism and leprosy seem to belong to diseases caused by degeneracy.

He says in another letter:

I doubt the existence of leprosy among the Micmacs, and fancy they and the French Acadians have been mixed up together by some inquirer on whom you depend.

Dr. A. C. Smith, superintendent of the Leper Asylum, Tracadie, Province of New Brunswick, writes me:

Leprosy exists in Nova Scotia only in the descendants of highland Scotchmen who emigrated in the early part of this century. There is no leprosy in the Acadian families, and none in the Micmacs.

There is no cretinism, no goitre, etc., in the province, so far as I have been able to learn. None in the families of the Acadian lepers of New Brunswick. The lepers of New Brunswick are degenerated French.

I have addressed the following letter to Dr. D McN. Parker, a leading physician, and one of fifty years' experience, and to the Rev. George Patterson, D.D., who has written largely on local history, and has given considerable attention to the study of local archæology, both of Nova Scotia:

NEW YORK, Aug. 24, 1895.

Dear Sir:—Dr. J. G. MacGregor, Secretary of the Nova Scotian Institute of Science, Halifax, refers me to you for information on the subject of the origin of leprosy in Nova Scotia. I am interested in the subject of pre-Columbian leprosy, and take the liberty to inclose in another envelope a reprint of an article of mine on that subject. The final note in that article refers to an opinion of Mr. Stansbury Hager, that the Micmacs came from the southwest of America, and therefore must have been in relation with the oldest leprous races on this continent. Mr. R. G. Haliburton entertains opposite views, and contends that the Micmacs neither came from the southwest nor were ever lepers. Leprosy came with the French Acadians. Dr. Smith, of Tracadie, contradicts Mr. Haliburton. According to this author, the Micmacs were not lepers, neither is there any leprosy in the Acadian families; that leprosy in Nova Scotia is found only among the descendants of Scotch highlanders. Haliburton has published a very entertaining paper on the survivals of dwarf races in the New World. He believes that cretinism and leprosy belong to diseases caused by degeneracy. "There is," he says, "a certain amount of idiocy among the French Acadians of Louisiana; moreover the Acadians are smaller than the people of Quebec, many not exceeding five feet." Among Mexican dwarfs and those of the Pyrenees, according to the same authority, idiocy is evidently the symptom of the decay of a race.

Dr. Smith, the leprologist of Tracadie, says: "There is no cretinism and no goitre in the Province of New Brunswick. None in the families of Acadian lepers in New Brunswick. The lepers in New Brunswick are degeneratedF rench."

I myself have ascertained that among the lepers of Colombia (25,000) goitre is exceedingly prevalent.

You will see, by the enumeration of these facts, the drift of my research. Did leprosy exist in Nova Scotia among the Micmacs and was the country affected before the arrival of either Acadians or Scotchmen? Is leprosy an indication of decadence, as the goitre or cretinism seem to indicate?

I shall be very much beholden to you, if you will dispose in my favor of such experience and knowledge as you have acquired in this matter. Yours truly,

ALBERT S. ASHMEAD.

Reply of Dr. Parker:

DARTMOUTH, N. S., Sept. 5, 1895.

DR. ALBERT S. ASHMEAD, *Dear Sir:*—I beg to acknowledge the receipt of yours of the 24th ult., and to say in reply, that I have never met in my practice, as a medical man during the the past fifty years, a single case of leprosy; and, while Halifax has been the center of my work, I have traveled all over Nova Scotia to visit cases of sickness, in consultation with other medical men.

I have never heard of a case of leprosy in the Micmac tribe of Indians—the only tribe we have in our Province. I think the Scotch, a very large portion of our population, are free from it, except in one locality—Lake Ainsley on the Island of Cape Breton, where it is said to exist.

I have written to Dr. Gunn, a practitioner in that locality, to inform me as fully as possible concerning the matter: I have also communicated with Dr. McDonald, the leading practitioner in Antigonish County which is almost entirely settled by Scotchmen, from the Highlands of old Scotland, and with Dr. Perrin of Yarmouth, in which county there is a comparatively large number of French inhabitants.

I have also requested the authorities of the Provincial Secretary's office to furnish me with all reports, if any, that may be on file in that department, bearing on the subject. As soon as I get replies from my medical friends, and a report from the Provincial government, I will communicate the information to you. In the meantime I remain,

Yours truly, D. MCN. PARKER.

Reply of Rev. Dr. Patterson:

NEW GLASGOW, N. S., Sept. 4, 1895.

Dear Sir:—I received your note of the 24th ult., and also your pamphlet on pre-Columbian leprosy, for which I am much obliged. I have been interested in what you have written, but was somewhat surprised by the assertion in the note at the close, that leprosy was endemic in Nova Scotia. It will be news to most, and even to many of our doctors, that it exists at all for it is only recently that it has been discovered, and then only in one remote and small settlement in the island of Cape Breton. There it was introduced by a man named Macarthy, an Irishman, and it has spread through his family connection. Occasionally a case appears in a neighboring settlement, but always of one who has been connected in some way with the family. I am not sure whether there are any cases where the disease has been contracted by mere contact, or whether there has been some relationship, but generally it is by the latter. It is almost entirely confined to that family or to those intermarried with them. But the people around have an idea of the nature of the disease, and now avoid contact with them. So connected is it with that family that the people call it "the Macarthy." I have not seen an official report of the case, but you may be assured that this is the only case where it has been known to exist in Novia Scotia, and it is only recently that it has been brought to light. I should have said that the Macarthys are a very poor family.

As to the question of its being among the Micmacs, I have to say that there is all the evidence that can be got to establish a negative to show that it never has existed among them. The early French explorers who came in contact with them, and have written of their condition and customs, Cartier, Champlain, Lescarbot, Denys, etc., make no mention of anything of the kind. From the time of the English coming into possession, the government had official dealings with them, relieving their wants so and in such a way that if there had been anything of the kind, it must have come under the notice of the officials. But all the researches of myself and others,

[1] I wrote Mr. Hallburton as follows: As far as I have studied the matter, dwarfs appear to me pathologic subjects. Dr. J. P. West, of Bellaire, Ohio, in the October number of the University Medical Magazine, mentions eight rachitic dwarfs in the Ohio valley: one a mulatto, three children of wealthy Scotch people. Dr. Morrow tells me that in his visit to Switzerland, he met over a hundred dwarfs in the San Martino Valley, along the road to the St. Bernard Hospice. Goitre was so common that a woman without it was looked upon as a freak. Dr. Taylor, of Princeton, Ontario, writes me he has treated 217 cases of goitre; among them were three dwarfs. Two of the latter had non-goitrous mothers at birth. Goitre developed subsequently in the mother of one, and a sister of the other dwarf. He claims that the majority born of goitrous parents have not the same mental caliber as those whose mothers are free from goitre. —A. S. ASHMEAD.

[2] Mr. Haliburton evidently does not know of Bretagne, France, and the Cagots of the Pyrenees.—A. S. ASHMEAD.

among our records have found nothing of the kind. I have had a good deal of intercourse with old settlers, whose recollections or traditions went back to the early English colonization, and though they had much to say about the Indians, they never speak of any such disease among them. I was on intimate terms with Dr. Rand, the missionary to the Micmacs, and often conversed with him on matters connected with them. Not only did he never mention such a thing as leprosy, as existing among them, but I find that in his translation of the New Testament into Micmac, he merely transfers the word where it occurs, showing that they knew nothing of its existence, or they would have originally had or would have framed a word to denote it. Besides they never were very numerous, probably never numbering more than five or six thousand. If this disease existed among them 300 years ago, they must have become extinct by this time or it would have become generally prevalent among them. You may therefore consider it as well established as any proposition of a negative character can be that there ever has been leprosy among the Micmacs.

From what I have said as to the only manifestation of it ever known in Nova Scotia, it will be seen also that both the Acadians and the Highland settlers are free of it. Perhaps however you may have heard of it in New Brunswick and confounded that Province with Nova Scotia.[3]

There is one district of that Province, in which it has existed for a good many years. That is in some poor French fishing settlements to the north of the Miramichi River.[4]

Tradition if not history traces it to a French vessel which had been trading to the Levant (her name is preserved as L'Indiennne) and which was wrecked at the mouth of the Miramichi river in the year 1758. It is said that infected clothing was distributed among the fishermen, that she had Lascars or some Orientals among her crew, who were under the disease. The wreck took place late in the fall, and the crew associated with the fishermen all winter. There are no authentic accounts so far as I know of the progress of the disease for some time. But in 1844, the disease had made such progress that the New Brunswick government erected a lazaretto, and took measures to compel all infected parties to be placed in it, and prevented from having any contact with persons outside. This has been continued to the present eime, the institution being now under the control and management of the Dominion government. By the last report there had been, during the past year, received six, and died two, leaving twenty-two under the care of the institution. This has been about the average number for a number of years, and it includes all the known cases of leprosy existing in the Province. Measures were taken a year or two ago to place in the same institution the diseased parties in Cape Breton. The medical superintendent went down there for that purpose, but found only one diseased party. But it is believed that others were concealed. The Lazaretto is situated at Tracadie, in Gloucester County, New Brunswick, and I should think that any further information you desire might be obtained by applying to Dr. Smith, the medical superintendent.

Sincerely yours, GEORGE PATTERSON.

Under date September 16, Dr. Parker writes me further as follows:

I enclose you the documents referred to in the letter addressed to you a few days since, obtained from the Provincial Secretary's office. Also a letter from Dr. Gunn, of Cape Breton, and another from Dr. Perrin, of Yarmouth, all relating to the subject of leprosy in Nova Scotia.

It is evident to me that the Micmac tribe of Indians have never been afflicted with this disease. They are diminishing in number, and degenerating in character, as well as physically, but the *vices of civilization* have effected these results. Pulmonary phthisis and rum are the principal causes, aided to some extent, doubtless, by syphilis. My belief is that leprosy had no existence in Nova Scotia prior to the advent of the French and Scotch.

Cretinism can hardly be said to exist in our Province, but goitre is not unfrequently met with.

I may add that having traveled a good deal in the Province of Quebec, and being quite familiar with the physical development of the Acadians resident in certain localities in Nova Scotia, I have never been struck with the disparity in size and height said by Haliburton to exist between the French here, and those resident in Quebec.

I think I stated in my brief note of the other day, that I had no practical experience with the subject in question, although I have been practicing my profession in Halifax for fifty years.

I very much wish I could furnish you with more material connected with the matter as the result of personal observation or with more extended and reliable data, derived from the observations of others, but such as I have I herewith submit to you."

The following is what Dr. Gunn, of Strathtown, Cape Breton, writes to Dr. Parker on this same subject:

There have been several so-called cases of leprosy at and near Lake Ainslie, among Scotch and Irish settlers. So far as I have heard there have been no cases among the native Indians or among the French Acadians. It has confined itself chiefly if not wholly, to Highland Scotch and Irish families. As far as my memory can decide there were cases of a disease that somewhat simulated leprosy, at Lake Ainslie and southwest Margarie near by; and there are a few families in these localities still afflicted by the malady.

For myself I never regarded the disease as leprosy for the following and perhaps other reasons: The disease does not evidently spread by contagion, or the whole community would be afflicted by it, as there has been no attempt made to isolate the sufferers, till quite recently, when one or two patients were removed to a lazaretto in New Brunswick. If it were leprosy, surely it would have overspread the whole country before now. Nor is the disease so fatal nor so loathesome as leprosy is represented to be. Many of its subjects have worked for years on their farms while suffering from the disease. It seems to be strictly an hereditary disease. Another circumstance seemed to me to strengthen the opinion that the disease was not leprosy. In a case treated by me, there seemed to be quite an improvement for some time, under the treatment usually prescribed for constitutional syphilis, namely, mercury and iodid of potassium. I do not intend to speak dogmatically on the subject. It would ill become a person of experience. I merely state the facts and my own observations. One thing you can depend on, the disease is not contagious. One of the men removed to the Lazaretto, lived for many years with a family, man, wife and children on the most intimate terms, ate and drank, and I think, slept with the children. Yet the disease never broke out in that family; you would expect otherwise, if it were leprosy.

The following is an abstract of a letter of Dr. A. M. Perrin, of Yarmouth, to Dr. Parker:

About leprosy in Nova Scotia: It is said that it exists in Cape Breton, among those who dwell up the river, and also at the eastern end of the county of Antigonish. But I do not think the report is authentic. As to the Indians of Nova Scotia, I think the disease has never been found among them. There is a legend among the French of New Brunswick as to the origin of leprosy among them, viz., a wreck was found on the coast near Tracadie, and the Shore-dwellers took the bedding and clothing home and used them, and a short time after the disease broke out. This story may not be true, but it is the one told. As to the French of Yarmouth and Digby Counties, I have talked with Dr. J. E. Farish, Dr. Harley, and Dr. Smith, all of whom have treated the French in every part of the countries named, and from my own knowledge, I am positive that the disease does not exist with us. The Indians of Yarmouth and Digby, suffer from all the different grades of syphilis. I do not know an Indian child or man that is not syphilitic. I was born in Pictou County, and I read with old Dr. Donnely, of Albion Mines; he was an expert in diseases of the skin, and I am certain, if he had met it among the Scotch of Pictou, he would have mentioned it. The Scotch of Cape Breton are descendants of the Western Islanders and Barra men.[5] I have looked up the different habitats of leprosy and the western part of Scotland is not mentioned.[6]

[3] New Brunswick continued with Nova Scotia to form part of Acadia or New France till it fell into the hands of the British after the conquest of Quebec. In 1784, New Brunswick was separated from Nova Scotia, and formed into a distinct province.—A. S. A.

[4] The first British settlers came to Miramichi from Scotland in 1764. The French had settled there in 1639.—A. S. A.

[5] Dr. Prince A. Morrow writes me: "It is a well known fact that lepr osy persisted in the Scottish Islands long after its disappearance from England and Scotland."—A. S. ASHMEAD.

[6] The first leper house was in Scotland 1170; in Norway in 1266. Leprosy was widely prevalent in Denmark, and in England and Scotland in the sixteenth century, from which last we have a notice of numerous cases of leprosy in Kingcase (County of Fife) in the year 1605. In 1698, a complaint was lodged by the procurator-fiscal, anent the intruding of the lepers of Kingcase upon the privileges only proper to the burgess and freemen of Prestwick, by their resorting to the shoar and taking of certain timber and other wrack, and casting greater quantities of peats and turf off the common and moss, etc., they ordained that none of the said lepers of Kingcase do so under the penalty of ane hundredth pund, *toties quoties*, to be paid by *ilk ane* (each one) of them in caise of failyie (failure)—Records of Prestwick. The disease appears to have continued in the northern islands of Scotland, long after it had disappeared from the mainland of Scotland and, indeed, all other parts of Great Britain. In Shetland it has been known for centuries. I have already made a quotation from Brand to show that it was at Lerwick as late as the latter part of the seventeenth century. In some districts of

I think Dr. Smith is wrong in the idea that Scotch brought it to Nova Scotia, and I am certain that Dr. Ashmead will not succeed in finding it among the Micmac Indians. I sent an article to the *Venereal and Skin Journal* of New York, on the treatment of leprosy in the Sandwich Islands by native doctors and on the use of *Aca Aca* by the natives themselves; by its use they can hide it for years. I will hunt it up and send it to you. My knowledge was derived from a man who had spent his life among the natives on the Samoan and Sandwich group.

Here are some official reports which Dr. Parker has been kind enough to communicate to me.

PORT HOOD, C. B., May 4, 1888. *Hon. W. S. Fielding, Provincial Secretary, Halifax. Sir:*—In reply to your communication of the 17th ult. requesting me to forward you a supplementary report on the existence of leprosy in this county, and asking me to suggest steps, with a view to the prevention of the spreading of the disease, and the preservation of the public health, I beg to submit the following:

This appears to me a most important question and, under all the circumstances, a both delicate and difficult undertaking. Within this range are two classes, viz., 1. Those already suffering from the disease, as exhibiting symptoms of leprosy or a skin disease allied to it. 2. The other class, where the disease is latent, not exhibiting any of the symptoms indicating the existence of any skin disease allied to leprosy.

This disease should be treated by thorough segregation in every case and interdiction of marriage.

The only hope of exterminating leprosy lies in the adoption of hygienic measures tending to improve the general condition, physical and moral, of the leprous poor.

Medicinal treatment is of no avail unless combined with the regular use of suitable diet and clothing, protection against the vicissitudes of American climate, personal cleanliness, and ample exercise in the open air.

Many in the immediate neighborhood of these leprous cases believe that the disease is contagious. I see no reason why, under some circumstances, the disease might be contagious, on the same principle as inoculation with smallpox or syphilis. Ulcers and all open wounds, with their accompanied secretions, should be regarded as possible sources of infection by attendants and members of the patient's household.

All the neighbors are alarmed at the proximity of the disease to their house. I beg to state one case in illustration, that of John Gillis, residing in Egypt; the family consisting of himself, his wife and several children, are in very poor circumstances; no outsider will approach his house, mingle with them or assist them in putting the crop down, etc., while he resides in the house, but if removed the neighbors I believe would attend to the wants of the family.

In class 2, I beg to recommend care and attention to cleanliness, avoid partaking of food likely to generate the disease. To watch families where the disease is hereditary, among whom may occur a constitution debilitated from some unknown cause. The disease usually shows itself from 15 to 25 years of age.

Your obedient servant, JOHN CAMERON, M.D.

NEWCASTLE, N. B., Dec. 17, 1895. *Hon. W. S. Fielding, Provincial Secretary, Halifax, N. S. Sir:*—By direction of the Honorable the Minister of Agriculture I made a personal and professional examination, last summer, of alleged cases of leprosy on Cape Breton. Obtaining lists of supposed infected persons and families from clergymen, physicians, and other leading men, and following closely in the wake of the medical gentleman who, by direction of your Government, had, the year before, made an inspection of the district, I spared no pains to make my visit as fruitful of results as possible. For many days, from sunrise to dark, I was in motion climbing hills and visiting out-of-the-way places; and, while not disposed to make light of a serious matter, I have no hesitation in saying that many of the newspaper reports concerning leprosy in that section are exaggerated and sensational. Though a limited number of cases had existed on the island, I reported to the Minister but three living, all of whom have been, or shortly will be segregated. The Minister is thoroughly alive to the great necessity of stamping out this focus of leprosy, and is maturing his plans to that effect. Certain diseases resembling leprosy are also found there; the distinction, however, is to be made by an expert, not by a newspaper correspondent. Among these can be mentioned sibbens,[7] one of the most horrible and contagious forms of skin disease, which has been the cause of many repulsive deaths there. As this malady can be diagnosed from some of the stages of leprosy only by an expert, it would seem to be wise for me to deal with it, and also to advise with local physicians and boards of health respecting its dangerous nature and treatment. Such a course would effectually silence those who for years have troubled the world with alarming reports of the prevalence of leprosy on the island.

Beyond the possibility of natives of Cape Breton meeting with difficulty, when abroad, in securing employment, because of supposed recent contact with persons suffering from leprosy, or kindred diseases—a matter referred to with some show of reason by a correspondent—it would be hard to adduce any motive of general reason apart from purely Provincial interests for dealing with diseases resembling leprosy from a Dominion standpoint. In view of the above considerations and within the limits referred to, I beg leave to suggest that I have conferred on me the powers usually given to boards of health, all my services to be rendered gratuitously, and no step involving any expenditure of money to be taken without first having obtained the assent thereto of the Honorable the Provincial Secretary.

I have the honor to be, Sir, Your most obedient servant,

ALFERD C. SMITH, M.D., C.M., etc.,
Inspecting Physician to the Hospital for Lepers, Tracadie, N. B.

PORT HOOD, C. B., March 19, 1888. At the request of the Provincial Secretary, on the 1st inst., to investigate the existence of leprosy or a disease akin thereto in this county, I beg to state that I visited and examined carefully several cases

Shetland it continued still later. Apparently most of those there affected either belonged to or were sent to the Island of Papa. I have in my possession a manuscript extract from the session books of Walls, showing the expenses incurred in keeping the lepers at Papa, 1736 to 1740. Four of them appear to have died during these years, and two of these entries are for "tobacco" (probably used as a disinfectant as was usual at Scotch funerals). In 1742 there is a long entry in the Session Records of Walls, earnestly enjoining a day of public thanksgiving for the supposed total deliverance of the country from the effects of leprosy. The disease was not, however, eradicated entirely. Mr. Jack, the resident clergyman who wrote the account of the Parish of Northmaven, for the Statistical Account of Scotland, published in 1798, seems to have seen "several miserable cases" of the disease, and adds, that in many instances, there is reason to suspect a hereditary taint. Dr. Thompson urged his pupil Dr. Edmundston, of Lerwick, to trace out the history of the disease in the North, and that gentleman has made the following observation upon it in his work on the Zetland Isles (Ancient and Present State of the Zetland Isles. Vol. II, p. 102): "Elephantiasis known by the name of leprosy, was very frequent in Zetland about sixty years ago, but its occurrence since that time has only been occasional, and at present scarcely an instance of it is to be met with." He saw a true case of elephantiasis a few years ago, "face bloated, skin scaly and rough, and voice slightly hoarse." The termination was not fatal, and it did not communicate itself to others. The last instance he saw was a boy. There was no reason for the outbreak, and Lepidis said it came on spontaneously and proceeded gradually. He says that "leprosy has long continued to linger in the neighborhood of the Faröe Islands, and in Iceland, that it was very common in the Middle Ages." He quotes Debes (*Descript et Faeroa Reserata*, etc., pp. 101 and 102) and *Acta Medica*, etc. Hafniensa, Tom. 1, p. 98. London, 1659) that true tubercular leprosy continued to prevail in the Faröe Islands (the nearest land north of Shetland), in the middle of the seventeenth century. Still later, viz., in 1768 Petersen found 30 lepers in the hospital there. It still prevails in Norway and Sweden. "As far as I am acquainted with the subject," he says, "it appears to me that under the name of radesyge (Scandinavian) two, if not more distinct species of disease were by Holst and the other authors who first wrote upon it confounded and described together. One of these, the radesyge, properly so-called, is probably nearly allied to, if not identical with the sibbens of Scotland. Another of the supposed varieties of the disease, the spedalskhed, or Spetalska seems, on the other hand, to be a different nosologic species, hereditary, non-contagious, chronic, incurable, and identical in many of, if not in all its characters, with true tubercular leprosy." (J.Y. Simpson, Antiquarian notes of leprosy and leper houses in Scotland and England, Edinburgh Med. and Surg. Jour., 1841, 1842.) Papa lepers and Faröe Island lepers had all the characteristics of tubercular leprosy.

"One of the last, if not the very last Scotch leper," says Simpson, "was in the hospital wards of the Edinburgh Infirmary in 1798. John Berns was his name, his age 28." Bergen, Norway, is the part of the continent of Europe nearest Shetland. In the thirteenth century, leprosy had reached "far north" in Scotland. There was a leper hospital in Elgin (a parish 118 miles north of Edinburgh) in 1226, that is before that of Bergen, Norway, 1266. The Hebrides Islands, off the west coast of Scotland, belonged formerly to the kings of Norway, and in 1264 were annexed to the crown of Scotland. Everybody knows that the ancient Kings of Scotland themselves had been lepers for centuries.

Barra men, from the Hebrides went to Nova Scotia. The Faröe Islands, 170 miles northwest of the Shetland Islands, were originally peopled by Norwegians. In the Shetland islands leprosy had almost disappeared in 1742. In the Faröe islands, leprosy disappeared in the middle of the eighteenth century.

[7] The first observations belonging to this group of phenomenal occurrences comes from Scotland in the middle of the 17th century at the time of Cromwell's invasion of the southwestern districts of that country, a disease appeared under the name of sibbens (or sivvens), which was afterwards (1694) carried by the troops to the Highlands. (See Freer, Diss. de Syphilide nec nom de morbo Sivvans dicto. Edinburgh, 1707, and various other authors). Its greatest prevalence was about the middle of the 18th century in the southwestern counties of Dumfries, Kirkudbright, Wigton, Galloway, and Ayr; as late as 1825–1840, there were 60 cases of it, from Highland districts admitted into the Glasgow Infirmary, but since that time the name of the malady has disappeared from Scottish medical writings. Descriptions of the sibbens tend to show that we have to do here with severe forms of syphilis, with frambesia-like exanthems, and probably also with syphilis complicated with other diseases, especially of the skin (scab). It appears that the malady was endemic mostly among the poor, filthy and neglected inhabitants of certain districts, and that it was spread not only by sexual intercourse, but also by contagion in other ways (wearing clothes in common, sleeping in the same bed, eating and drinking out of the same dish), as well as by heredity. (Hirsch.)

reported to me in the following districts, viz.: Lake Ainslie, Egypt, Lake of Law in North East Margaree and the Little Narrows. The parties affected with this disease, and their relations, appeared unwilling to give full particulars of this malady. I found their neighbors and others very willing to help me with the history of each case and apparently very anxious that the Government should take some steps to remedy the present evil.

First, I visited a family of the name of MacArty, at Lake Law, notorious for the existence of leprosy in the family. In the house at my visit were only the old man MacArty and a widow, his daughter-in-law. Old MacArty said that he was 97 years of age, a native of Ireland; considering his age in unusual good health. His wife, Betsy Hardy[8] came from Yorkshire, England; married her in Prince Edward Island. She is dead; was aged 64; was ill with leprosy for about five years, which caused her death. She had five sons and three daughters. Some of his family died with the same complaint, viz.: Richard died from leprosy, aged 50; John died from leprosy, aged 30; William died from leprosy, aged 24; Mary died from leprosy, aged 40. Married to John Doyle, family left for the States. It is supposed that John Doyle contracted this disease from his wife, as he also died from leprosy.

Living—Henry MacArty, aged 49, in good health; Catherine, married to John Conner, aged 44; she is in good health; has six of a family; all reported in good health. John Conner died from leprosy, said to have contracted it from his wife. Susy, married to James Cameron, the latter said to have died from leprosy at Cheticamp about five years ago. The widow reported to be in good health. Two of this family are away in Boston.

Case 1.—Visited the house of James Harris. In the house I found his wife, a sick boy, and a young woman too much disfigured to be seen. Twice the mother tried to allow me to see her in her room, but she positively declined to see me. The mother allowed to be examined as to the present state of her daughter's health. She says that she is twenty-nine years of age and ill for about ten years. Supposed she took ill from a bad cold. She never attended a leprosy case or lived with any of those affected with it. She suffers from acute headaches; throat complaint; there is a fetid discharge from her nostrils; the nose swollen and ulcerated; her eyes inflamed and sunk in her head; some of her hair falling off; she is occasionally attacked with shiverings; her hands feel cold, not contracted, but of a dark color; the lower extremities somewhat anesthetic, but toes not contracted; the skin over her face is rough and thick, with tubercles interspersed here and there. Diet: Lived a good deal on sour milk, bad quality of cheese, salt fish, such as cod and herrings, tea, bread and butter. I was told that Dr. Carmichael attended upon her, and that he would supply me with more information. I had called upon Dr. Carmichael and he said that he never attended upon her, but occasionally they sent to his office for medicine for her. Examined a near neighbor of the above case. Says he knows Mary Rachel Harris. Last time I saw her was, I think, in the fall; her eyes appeared sunk and inflamed; face swollen, tubercular and ulcerated. Nose destroyed by ulceration and exposing the bones of the nose. It is believed that she contracted her illness from Joseph Brown, an uncle who had died from leprosy. Brown was blind and deaf (sic) and she was constantly at his bedside reading to him. I am of opinion that the above case is an advanced stage of leprosy (tubercular form). The sick boy, William, 19 years of age, confined to his room since January; examined him and found no symptoms indicating leprosy, but an unhealthy looking subject, favoring the development of this dreaded disease. There are two other boys in the family, one in the house apparently well, and the other at sea. James Harris and wife are well, but his wife's brother, Joseph Brown, died from leprosy.

Case 2.—John Gillis, residing in Egypt, aged 50; ill since about eighteen years of age; can not leave his house, but will move freely enough inside the house. Appearance: Face tubercular, irregular and shining, particularly over the cheek bones; the nose broad and flattened, caused by ulceration and the parts healed, afterward leaving cicatrices; the eyelashes are destroyed, with a cluster of tubercles over the upper eyelids and forehead. The ears peculiarly thickened and elongated; the voice very husky and hoarse. Throat examined, fauces of a pale appearance, uvula almost disappeared. The pharyngeal region appeared as if minute ulceration existed in the mucous membrane. Both hands are of a blue color, rough and tubercular, all the nails disappearing and in a diseased state. Examination of the lower extremities, somewhat atrophied and wasted. Cicatrices of old sores from the knee to the foot; all the toes in a state of ulceration and will likely slough off; both legs are somewhat anesthetic. Has cold shiverings and can not sleep well. Has no proper food. For several years could not work and no one comes to see him. He is very destitute. He has ten of a family, ages from 8 to 21. Some of them are not allowed to come near him, two of them are working at the C. B. Railway and send him any relief they can afford. The wife and children at home are apparently well. He had a brother, Donald Gillis, who died of leprosy at Southwest Margaree; he was ill with it for about ten or fifteen years. His face and body were in a horrible state. He lost his sight by it. John Gillis' neighbors report to me that he wore some of his brother's clothes, that he was seen going to his place and was recognized while he was wearing them. John Gillis denies this; says he never took any of his clothes. Another brother, Angus Gillis, residing at Cheticamp, and married to one of the MacArtys, of Lake Law, is reported to me as suffering from leprosy. He went there from S. W. Margaree about a year ago.

Cases 3 and 4.—Maggie McLean, aged 40, residing at East Lake Ainslie; illness began when about eighteen years of age. Her face apparently free of tubercles. Throat examined; the fauces of a peculiar pale color; nothing abnormal to be seen. Her hands and feet were found tubercular, with a few ulcers, swollen and contracted. She has difficulty in walking; attacked with cold shiverings sometimes; the legs and hands are benumbed as if want of feeling; her voice is clear; diet very poor; lives on salt fish, potatoes, tea and bread.

Christy McLean, aged 49, lives with her sister, Maggie McLean, the above case. Illness began when about twenty years of age. The same train of symptoms as in her sister's case.

Archy McLean, aged 40, a brother, died from leprosy nineteen years ago. He was ill for more than twenty years with it. There is a brother living, aged over fifty years, married and has six of a family. He is reported to be in good health.

Case 5.—Duncan MacKinnon, residing near the outlet of Lake Ainslie, aged 42, appears to be upward of fifty years of age. He is a shoemaker by trade; unmarried. Examination: His face is much swollen and tubercular; nose enlarged and inflamed; there is a discharge of blood and matter from it; eyelashes destroyed; eyes sunk but not red; sight is good; hair falling off; ears tubercular and elongated like Gillis'. Examination of throat: Has peculiar red streaks running from above downward toward the uvula. The mucous membrane in the pharynx slightly ulcerated; spitting thick matter occasionally. Sometimes he is attacked with severe shiverings. He is very hoarse. His hands and feet are tubercular; both have less feeling in them than in health.

Case 6.—Flora MacKinnon, wife of Malcolm Matheson, aged 33, residing at the Little Narrows. Her illness began about eight years ago; is of a much milder character than any of the rest. There are a few tubercles on her face and the marks of cicatrices are seen on her arm where sores existed at one time. She is able to attend to her household duties; is very active and useful. Attends to her health by medicines she receives from her doctor, which she says is of benefit to her. I could detect no constitutional disturbance. Has no attack of shiverings. She has six of a family, all are apparently in good health. The youngest is only a few months old and fed by the nursing bottle.

I had visited and examined several other families reported to me at Lake Ainslie, but were to all appearances free of any symptoms indicative of leprosy or any other disease akin to it. I shall be glad to give further information on some points which I may have omitted. I have the honor to remain,

Your obedient servant, JOHN CAMERON, M.D.

In answer to my inquiries as to the date of the outbreak of leprosy in the McArthy family, also as to where McArthy was exposed to the disease before he inoculated the country with it, and as to that other question whether he brought it from New Brunswick, Dr. R. G. Gunn, of Strathtown, Nova Scotia, writes to me:

I regret that at present I am unable to give you the desired information, but I shall endeavor to state a few facts bearing on the disease in question which may be of some interest to you, and shall try to get the dates asked for, or an approximation thereto, and write you again.

Whether McArthy's was the first case of the disease in this place, I am unable to say, but I am inclined to think there were other cases as early or earlier. That he had been in New Brunswick I doubt, but I will make inquiries. I am satisfied, how-

[8] Dr. Smith, of Tracadie, writes me: Betsy MacArty, the first of the family to show symptoms of the disease, came from Prince Edward Island; she was born in Lincolnshire, England, and married in 1836. In 1852 she became afflicted with leprosy. Several of her sons died of the same disease.—*Ashmead.*

ever, that the McKinnons at Lake Ainslie had no direct communication with McArthy. With them it seemed to be a family disease, rather than the result of contagion. There are two cases at Lake Ainslie now in the McLean family, which are said to be leprosy, and for whom county funds are annually paid on the assumption that they are real cases of leprosy. These are not, so far as I know, connected with the McKinnons or McArthys. Near by is a young man connected with the McKinnons, who is supposed to be in the incipient stage of the disease. The most marked symptom in his case is loss of the eyelashes and eyebrows. Would these be suspicious symptoms?

A marked symptom in the only case that came under my supervision was huskiness and weakness of the voice, showing that the larynx was involved, and arousing suspicion of syphilis. This symptom is, I am told, always present in the cases of so-called leprosy in this place. There was also much swelling of the face with many nodular tumors, and a dusky purplish hue of the skin. There was also swelling of the hands and feet with nodes or small tumors around the elbow joints. The swelling of the face latterly became extreme, the eyes being almost hid. The hands also were much swollen and somewhat distorted, rendering any kind of manual labor extremely difficult. So far as I remember there were no ulcers. The skin was unbroken. The skin, however, looked quite scaly and unhealthy. Such is a brief and very unsatisfactory sketch from memory of a case seen by me several years ago.

I have received the following letter (dated Oct. 23, 1895) from Dr. John Cameron, Port Hastings, C. B.

. . . . . Your queries are the following: 1. If leprosy existed in Nova Scotia among the Micmacs before the arrival of Acadians or Scotch? 2. Is it a disease affecting only degenerates in Nova Scotia, families with goitre, cretins or idiots? 3. What is the date of the first case in the McArthy family of Cape Breton? 4. Did McArthy bring leprosy from New Brunswick, or another leper country? 5. Do you think the disease originated in Nova Scotia from infected fish diet, water or soil?

CAPE BRETON LEPER.

Answers: 1. I think not. 2. It appears so to me. 3. Date not exactly known, but supposed to be about 1845. 4. From New Brunswick. 5. No, but such diet would very probably bring the disease latent in a constitution to full development of the disease.

At Lake Ainslie, a Scotch settlement, there is a strong opinion still prevalent among them that the disease originated first from one or more parties who served as soldiers in the plains of Egypt, and had carried the disease into this country, about the year 1825. A number died from this disease at Lake Ainslie, not mentioned in my report. Since my report I had a case of elephantoid enlargement of scrotum in that locality, a disease evidently hereditary and probably taken by the same party from the east, where it abounds.

I addressed the following letter to Dr. Gunn, of Strathtown, N. S.:

May I trouble you again to obtain for me a photograph of a Nova Scotian leper, and one of a Nova Scotian sibbens. Now, as to the question you ask me, Would the loss of eyelashes and eyebrows be a suspicious symptom?

In Japan, however, many symptoms of approaching leprosy may occur, it is only when the lashes and brows fall, that the common people recognize the disease.

Dr. Smith sends me two photographs, one that of a Cape Breton leper, the other of a Tracadie leper. He remarks: The Cape Breton leper is one of two sisters afflicted in exactly the same manner. The feet are affected in a similar manner in both cases. The disease, which has some resemblance to rheumatoid arthritis, is without doubt lepra mutilans. I have to make my diagnosis of the Nova Scotian cases, between that hydra-headed monster syphilis and sibbens and leprosy. That leprosy exists in Nova Scotia there is no manner of doubt. In addition to the general symptoms, the march of the disease, etc., the microscope shows the sections filled with leprosy bacilli, and there is the histologic structure of the disease.

"I did not use the word 'degenerate' in the meaning you used it. Our French are not undergoing evolution to a better life. Theirs is a clear case of reversion toward their tertiary ancestors."

Dr. Parker, in answer to my request for photographs, says: "I am about 250 miles from the place, and have no means of procuring photographic representations of their features, or anything that would illustrate the physical condition of other portions of their bodies. I have understood that they and their friends dislike their being brought in contact with persons outside of their immediate families, and if this is the case, the matter would hardly be accomplished by open measures."

TRACADIE LEPER.

Dr. Gunn appreciates the difficulty, and says at the close of his letter to me, "I will, however, make inquiries and communicate with Dr. Ashmead on the subject if the difficulties in question can be overcome."

Dr. Gunn "fears that it will not be easy to get the desired photographs. All the subjects of the disease in question that I know of live in remote country districts far removed from a photo-saloon. Beside, they would probably raise serious objections to the proposal of having their pictures taken. Possibly these, by no means unnatural objections, can be removed. I will make inquiries as soon as convenient and will let you know the result of my inquiries."[9]

Regarding a relationship between the Mayas of Mexico, and the Micmacs of Nova Scotia which is claimed by Mr. Stansbury Hager, and a possible connection between the Mayas and ancient India, which is believed in by Le Plongeon I give here a letter I wrote to Edward H. Thompson, F. R. G. S., Merida, Yucatan. The letter which follows my own is the answer of Mr. Thompson.

[9] Of this case Dr. Smith writes: "That poor fellow—one of several who lived close to leprous families—is now dead and I regret not having any photograph of his to send you. But if you will examine plate 8 of Leloir's 'La Lépre' you will find so close a resemblance to his face that no photograph could come much nearer."

MERIDA, YUCATAN.

MR. EDWARD H. THOMPSON, F.R.G.S.—*Dear Sir:*—Mr. Mercer (Henry C. Mercer, Curator Section of American and Prehistoric Archæology, University of Pennsylvania) tells me to write to you for information about the question of pre-Columbian leprosy in Yucatan. Le Plongeon claims to have found representation of negroes, Mongolians, Burmese, which show at any rate, a relation with India, that is a with a leprous country. He says that there was among the Mayas of Yucatan, a name *nayeam* meaning to rot, which he supposes to stand for leprosy; in that case it would have been before the Spaniards. Dr. Muniz, of Peru, believes that leprosy existed among the Incas, before the Spaniards. His proofs are the loss of nose and upper lip, visible on huacos pottery. But as these same samples of huacos pottery, show no deformation of fingers and toes, which is the most frequent and absolutely necessary symptom of mutilating leprosy, it is reasonable to suppose that such deformations are intended to represent not leprosy, but lupus or syphilis.

Will you please tell me whether in your extensive explorations, you ever found any representations or ordinary monuments, or any pottery, or any pathologic evidence in bones (pre-Columbian), which make you believe that leprosy in this country was pre-Columbian. Yours truly,

ALBERT S. ASHMEAD.

QUINTA ACADIA, MERIDA, YUCATAN, Oct. 10, 1895.

DR. ALBERT S. ASHMEAD, *My Dear Sir:* . . . Don't build too much on Le Plongeon's theories and claims. Not a single point of contact between the old and new worlds before the Columbian era can be proved by monuments or facts so far found in Yucatan, or adjoining provinces. The Maya word you quote may have in the olden times it was used more for consumption, phthisis. *Nayal* is used when one is fainting from extreme debility. I have found many skeletons, but have never observed the evidences of leprosy. . . . .

Sincerely yours,

EDWARD H. THOMPSON, F.R.G.S.

It seems to me then that we must conclude: 1. That there is no leprosy among the Micmacs, and never was. 2. That in Nova Scotia leprosy exists in one Irish family, in the Island of Cape Breton, and only among the descendants of Scotch Highlanders in other parts of the Province. The original MacArthy leper came from New Brunswick, date of his leprosy supposed to be 1845. It may have come from Egypt; it was, according to tradition, brought by soldiers in 1825. 3. That in the Province of New Brunswick leprosy was introduced by a French vessel from the Levant, in the year 1758, and the disease is there still among the "degenerated" French.[10]

Some say that there is an etiologic relation between the fish diet and leprosy.[11] Witness Norway, Japan, China, Coasts of Spain, etc. Leprosy in Nova Scotia and New Brunswick might be also quoted to corroborate such views. There is, as is well known, an immense fish trade going on in those provinces. Nothing is more conceivable than that the bacillus, through an intermediary, finds in the fish a suitable soil for spontaneous culture or preparation for a further development in the human body. Climatic factors, producing certain nervous conditions in the human organism, like, for instance, syringomyelia, mal de San Antonio, scleroderma, Raynaud's disease, etc., a prebacillary stage, may allow the bacillus to be inoculated, and pursue its development in a higher organization. Racial degeneracy also[12] may operate in a similar manner to climatic factors mentioned above.

[10] The first French case of leprosy in Vermillion Parish, Louisiana (Mme. Ourblanc) came from the south of France, 1866. Several of the family were afterward afflicted; also a nurse who waited on her, and a young man who had slept on the same bed. (Leprosy in Louisiana, from Annual Report of the Board of Health for the year 1880.) From general results of the investigation of leprosy in the Bayou La Fourche, Louisiana, I quote the following: "The entire region of country traversed by the Bayou La Fourche is low, level, alluvial land, which slopes back from the river to the cypress swamps and marshes. This region is adapted by soil and climate to the cultivation of rice, sugar cane and he orange. Below Harang's canal along both banks of the bayou, oward the Gulf of Mexico, the narrow strips of land are thickly populated by small farmers, and in many instances the habitations arranged behind the levees are surrounded by rice fields. It is evident, therefore, that the inhabitants of the lower La Fourche are subject to the con-tant action of a low, moist, malarial atmosphere. Another point of interest in this inquiry is that the diet of these people consists largely of rice, fish and wild birds and animals, as the different variety of duck, crane, snipe, woodcock, raccoon, opossum, squirrels and rabbits. It is said that a fish-eating people are ill-nourished, and in eastern countries are particularly liable to become leprous. If this be so, it must be associated with such poverty as prevents the inhabitants from obtaining a proper variety of fresh food and vegetables. Certain districts of the Mediterranean coast of Spain are cited in illustration of these facts, where there is a fish-eating and a poverty-stricken population; and if we turn to another fish-eating community—that of part of the west coast of Norway—we find the disease, although some of the people are characterized by robustness of health and great physical strength.

It is possible that the prolongation of the leprosy in this and similar regions, while it appears to have gradually become extinct in the more elevated and healthier portions of Louisiana, may in a measure be due to the effects of climate, soil and food; but from the result of our investigation we are convinced that in its first origin the disease must be traced beyond the confines of this State, to the southern states of Europe, and to the coast of Africa. In other words, the disease on the Lower La Fourche has been propagated by hereditary influences, and by personal contact rather than engendered by climate, soil or food. The latter causes may form important factors in the prolongation of the disease through several generations.

It is possible that the seed of the disease imported originally from the south of Europe, and from the French settlements of Canada, would have perished in more elevated and healthy regions. The habits of the Creoles of the Lower La Fourche, appeared to be temperate and simple; the education of many of the citizens appeared to be limited from the nature of the country, and the necessity of maintaining large families on small areas of land. It is evident, therefore, that under these circumstances, the contiguous settlements were often closely related by ties of friendship and blood. (Louisiana Board of Health Report, 1880.)

[11] Dr. Danielssen, of Bergen, writes: "I have no reason to suppose that leprosy originated spontaneously in Nova Scotia from infected fish."

[12] The chief centers of goitre in Scotland were in the interior, Perthshire and east coast of Fife, the Kingcase lepers were in Fife. There are also centers of it in the southern counties (Mitchell, British Medical Chir. Rev., 1862), in the east of Wigtonshire and Kirkudbrightshire, in Dumfrieshire and Roxburyshire, in the west of Berwickshire, in the northern districts of the counties of Selkirk, Peebles and Lanark and adjoining parts of Ayr, and in the Isle of Arran (Blackie Reid). Wigton, Kirkudbright, Dumfries and Ayr were centers of the disease sibbens. Arran is in the Hebrides.

Sibbens and goitre among the Scotch, and goitre and cretinism in the inhabitants of our Cordilleras, are evidences of racial degeneracy. Dwarfs and the capots of the Pyrenees are merely stages in the dying out of a race. Leprosy is a disease of degeneracy.—A. S. A.

[NOTE.—Sibbens: See also E. Gilchrist, "An Account of a Very Infectious Distemper Prevailing in Many Places." Essays and Obs., Phila., Soc., Edinb., 1771, iii, 154-177. J. Rollet, Sibbens d'Ecosse, Dict. Encycl. d. Sc. Méd., Par., 1881, 3, s, ix. 522-526. Willemoes. Af handling om den i Skotland herskende Sibbens v. Syphilis insontium. Med. Hensyn til den Norske Radesyge. (Comparison of Sibbens with Radesyge.) Bibloth. f. Laeger. Kjobenh, 1830, ii, 25-42. D. Wills. Remarks on Sibbens. Monthly J. M. Sc., Edinb., 1844, iv, 282-289. Also: Dublin Q. J. M. Sc., 1844, xxv, 346-354. W. Wright. Syphilis in Canada, as denoted by Sibbens. Med. Chron., Montreal, 1856, ii, 299-303. Wills refers to an article by Dr. Hillary, Edinb. Jour. Med. Sc. for 1826), where he attempts to prove that sibbens of Scotland and West Indian yaws are the same disease. "This disease" (sibbens), he says, "is analagous to frambesia of the fifteenth century." He thinks that the outbreak from 1684 to 1695 corroborated Wills's opinion. "Sibbens and yaws of the West Indies are alike in whitish ulceration of tonsils, fungoid character of sores, a first attack probably giving immunity from a second, and their appearing to run a somewhat similar course in point of time. Mercury has a specific effect in sibbens."

Benjamin Bell's work on Venereal (1793) has a section on "Some peculiarities of form under which lues venera has appeared in Scotland and Canada (called sibbens in the Highlands and yaws in Dumfries and Galway). A soft, spongy excrescence, in size and color resembling a common rasp, which is apt to appear on all such parts as either become ulcerative or that are attacked with any kind of eruption; hence the name sibbens or wild rasp. This spongy substance may rise to a considerable height, nor can it be kept down by any of the common escharotics; it scarcely removed it soon returns, unless the virus be removed by mercury." Wright thinks that button scurvy as observed in Ireland, and frambesia in the West Indies and Africa, are analagous affections. He thinks there is nothing national in the affection sibbens as it appears in Scotch.

NOTE.—Mr. E. Foster, of the *Daily Picayune*, New Orleans, La., has written me as follows: "There is little doubt that leprosy existed in this State before the arrival of the Acadians in 1765 (ten years after the so-called expulsion), but whether Elephantiasis Græcorum or Arabum there is some doubt. Is it probable that during the twenty years which elapsed between their advent and the establishment of a leper hospital by Miro in 1785, the disease had spread to such an extent amongst the immigrants that such establishment became imperative? This is negative evidence to my mind. There is a belief that the disease was introduced amongst the Acadians of Lafourche by their compatriots who came from the West Indies, but of this I can find no confirmation. It is interesting to note, however, that Sloane mentions a case of 'Graecum' in Jamaica at the end of the 17th century. That the disease should exist amongst the Acadians in New Brunswick and in Louisiana is a positive argument of weight, but at this late date it will be impossible to prove whether the statement of Dr. Pratz (1718) referred to the Yaws, Arabum or Graecorum. The Acadians of Louisiana, at least, are not an effete race by any means, and personally I do not think that leprosy is a sign of degeneracy. Goitre, cretinism and idiocy are different, but I can not find that there is any sign of either amongst the Acadians of Louisiana. As a class they are larger in stature than the Creoles, and while a large number of them may seem to be dull of intellect this can be put down to—what I call it—hereditary laziness induced by the richness of the soil, of which you have merely to scratch the surface, scatter a few seeds and nature supplies the rest with a bountiful hand."—A. S. ASHMEAD.

A SUGGESTION THAT NATIONAL LEGISLATION PROVIDE FOR A MEDICAL EXAMINING BOARD TO CONFER A SPECIAL DEGREE IN MEDICINE AND SURGERY

AND THAT THEREAFTER THE STATES, THROUGH THEIR MEDICAL LICENSING BOARDS, SHALL LICENSE ONLY UPON THIS DEGREE.[1]

Read before the San Francisco County Medical Society, Nov. 12, 1895. [Published in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION by official request of the Society.]

BY C. E. FARNUM M.D.

DEMONSTRATOR OF ANATOMY AND ADJUNCT TO THE CHAIR OF ANATOMY, COOPER MEDICAL COLLEGE, SAN FRANCISCO, CAL.

That there is a plethora of medical colleges and of medical students and practitioners in the United States, is so well-known that it is unnecessary to make the assertion in this paper. That this condition does not exist in countries in which governmental restriction is exercised over the examining and licensing of physicians and surgeons is clearly shown by statistics giving the relative number of medical colleges, students and practitioners in proportion to population in the several countries of the world.

From an editorial published in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, dated March 24, 1894, it is said of the number of students attending the 136 medical colleges in the United States (109 regular medical colleges, 19 "homeopathic" and 8 "eclectic"): "At the sessions of 1885 the total attendance was 10,891 of which 9,245 were regular, 1,032 homeopathic, 614 eclectic. During the sessions of 1893, the attendance was 18,910, of which 16,759 were regular, 1,410 homeopathic and 741 eclectic. These figures show gains in eight years of 73.6 per cent. in the total attendance, 81.2 per cent. for the regular students, 30.6 per cent. for the homeopathic, 20.6 per cent. for the eclectics, an average of 9.2 per annum during the period. The average increase of population during the same period was less than 2.5 per cent. So that instead of being a diminution of students of medicine in relation to population, there is a relative increase nearly four times greater than that of population. As a matter of practical interest to the profession it may be noted that there is an average increment of nearly 6,000 new home-made physicians every year, and that while the population increased 24.8 per cent. during the decade 1881 to 1890, the number of newly graduated physicians increased 50 per cent. during the same period; last year, 1893, the increase was a trifle over 8 per cent." From statistics collected by F. W. Reilly, M.D., making interesting comparisons of the number of students attending medical colleges in the United Kingdom, France, Germany and the United States and Canada, and published in the same journal in the issue of Jan. 12, 1895, I quote the following:

"United Kingdom (Great Britain and Ireland), 8,696 total registered students between 1889 and 1893; for the year 1893, based on yearly accretions, 7,000; population, 37,000,000.

"France, total number medical students inscribed on the books of the Paris Faculty of Medicine for 1894, 5,144; population, 40,000,000.

"Germany, total number medical students registered for 1894, 8,684; population 50,000,000.

"United States and Canada, total number medical students in attendance sessions of 1894, 20,800; population, 70,000,000.

"Proportions: In the United Kingdom, 1 medical student to 5,286 of population; in France, 1 to 7,776 of population; in Germany, 1 to 5,757 of population; in the United States and Canada, 1 to 3,365 of population."

After reading these statistics we doubtless agree with the editor of that journal when in an issue of Dec. 29, 1894 he says concerning the increasing student classes, "Congress may put tariffs up or down, or abolish them entirely, may threaten currency legislation or railroad-pooling bills, or any other device for or against the prosperity of the nation, but here is one American infant industry that thrives apace and asks for no protection. What the struggling practitioner in the already overcrowded ranks thinks of it belongs to another category."

A government medical board upon whose examination alone can licenses to practice be granted, is perhaps the only means by which in the United States this increasing plethora of medical colleges and graduates can be relieved. It is only through national legislation that the medical colleges in the United States, or in fact in any other country, can be forced to adopt a uniformly high standard of medical education. Such a standard will certainly not be attained by the ununited and non-coöperative methods now pursued by the several medical schools of this country.

It can not be expected that Congress will ever take from the several States of the Union the right or power to regulate the licensing of physicians and surgeons; but national legislation can provide for a government medical and surgical examining board that could examine all applicants and to those who pass the examination confer a special degree with some proper title, such as "Fellow in Medicine and Surgery, United States of America." In order to maintain a high standard of requirements for passing this examination and keep this examining body free from political influences, a controlling majority of the members of this board should be selected from the medical staff of the United States Army and Navy. A degree from this board should be accepted as sufficient evidence of qualification or fitness for admission to medical positions in the Army or Navy. For the convenience of applicants in the several States, this examining board could periodically hold meetings in each State or district of the Union.

This government board having been formed for the purpose of examining applicants as to their qualification to practice medicine and surgery and for the purpose of conferring a degree or giving a governmental recognition of that qualification, the several States of the Union would then have a uniform standard upon which they could license physicians to practice, and each State could through its legislature provide that any person not already licensed to practice medicine and surgery in that State must first present a degree from the national board of examiners before he can obtain a license, the applicant's license then to be granted regardless of what medical college he has ever attended or whether he has or has not ever attended a medical college. By this plan the granting and the revocation of licenses to prac-

[1] This Board to be principally composed of and under control of the superior officers of the medical staff of the United States Army and Navy.

tice would still be reserved to each State, the government standard of qualification being the only one upon which licenses would be granted. With such a national examining board in existence, but a short period of time would elapse before all States and territories would license only upon certificates of qualification issued by this board or else permit to practice only those who could register a degree from this board.

In examining the last report of the Secretary of the Illinois State Board of Health, I ascertain that in only sixteen of the forty-nine States and territories in the United States is an examination for a license required of all applicants. The examining boards in these States are appointed by the governor or a local board of health or elected by a county or State medical society; in one State, Texas, they are appointed by judges of district courts. These sixteen States represent but a small proportion of the population of the United States. They are Alabama, Arkansas, Florida, Indian Territory (Cherokee Nation), Maryland, Minnesota, Mississippi, New Jersey, North Carolina, North Dakota, Pennsylvania, South Dakota, Texas, Utah, New York, Virginia and Washington. In the remaining thirty-three States, including the District of Columbia as one, the legal requirements for practice are either none whatever or a license granted upon some diploma, a registration of some diploma, or, in a few States, an examination in the absence of a diploma. At the present time, any licentiate in one State in the Union moving to one of sixteen States that now license only upon examination, would be put to the inconvenience of passing an examination in each one of these States in which he may locate, an experience which could be avoided should all States license upon a degree or certification issued by a national examining board.

No "pathy" should be recognized in the personnel of this board. Since all who practice medicine and surgery, homeopathists and eclectics included, proclaim that they have studied and are familiar with regular medicine and use it in their practice, a degree from this examining board would be simply verification of their claims. If they want a special degree as evidence of knowledge in their preferred "pathy," their own college can furnish them with that. This board should recognize neither "pathies" nor diplomas nor any medical schools or teaching bodies. Homeopathists and eclectics, familiarizing themselves in therapeutics sufficiently to pass the examination before this board, certainly should be able to well understand what they term "comparative therapeutics" and perhaps make such use of their own therapeutic methods as would be in better conformity to their theory and more satisfactory to themselves.

This national board of examiners should be permitted to make its own rules and standard of requirements and exercise its own judgment as to how many and what subjects all the candidates shall be examined upon, the only restriction being that a degree or certificate of qualification shall be issued only upon examination. This would prevent interference through court processes with the proper and satisfactory performance of its duties.

What is suggested in the foregoing may be briefly stated as follows: 1, that national legislation provide that a national board, principally composed and under control of the superior officers of the medical staff of the United States Army and Navy, shall examine all applicants as to their qualifications to practice medicine and surgery, and, to any one who successfully passes the examination, shall issue a certificate or degree as evidence of such qualification; 2, that thereafter each State legislature, at its option, may provide that its medical licensing board shall accept as evidence of proper medical qualification upon which to issue license only the degrees or certificates of qualification issued by the national examining board.

The national examining board and the State licensing boards would be entirely independent of one another, it being optional with any candidate to undergo an examination by the national board and optional with each State to adopt or accept as evidence of proper qualification to practice medicine and surgery, and upon which to issue a license to practice, the degree or certificate of the national board of examiners or, as at present, a degree from a local or foreign college or a certificate from a State examining board. However, should any State or States or all the States adopt the national standard of qualification for practice and issue licenses only upon certificates or degrees from this national examining board instead of it being optional with the candidate to appear before the national examining board, it will by the State be made necessary that he do this in order to obtain a license. In other words, the States would still reserve to themselves the licensing function and the right of revocation, but would adopt and accept only the national standard of qualification upon which to grant licenses.

The principal results that would follow from licensing physicians and surgeons upon no other evidence or certificate of qualification than a degree conferred by a national examining board under control of the superior officers of the medical staff of the United States Army and Navy, would be as follows:

1. The examining body will not be under the control of politics or of medical colleges, or of medical societies in which members of college faculties have a controlling influence.

2. A better and more uniform standard of qualification would be required. The granting of licenses upon diplomas from all kinds of colleges, both local and foreign, or upon examinations by boards of examiners elected by State and county medical societies or appointed by governors, as is done at present, certainly does not give as good assurance of proper qualifications as would a certificate based upon examination by the superior officers of medical staff of the United States Army and Navy. Who does not know that a college diploma, whether American or foreign, is not infrequently issued to those who are much more poorly qualified than is the average practitioner and to those whose qualifications would be inferior to one who had successfully passed examination by the medical staff of the United States Army and Navy? To the medical profession in foreign countries it certainly must seem peculiar that those who have degrees from European colleges can in this country be licensed upon degrees or diplomas that in the countries in which they are issued would have no legal recognition or would not be recognized by a licensing board or accepted as evidence of proper qualification for practice. It is a well-known fact that in many of the best foreign medical colleges, especially in Germany, attendance upon lectures or college curriculum is not obligatory, and that in applying for a degree of

Doctor of Medicine simply the passing of the examination is required, no other evidence whatever of previous study or attendance upon college curriculum being required. In other words, any person passing the examination in one of these universities can, without ever having studied or attended upon a college curriculum, get the degree of Doctor of Medicine, a foreign diploma, upon which most of the licensing boards in this country will now grant him a license to practice medicine and surgery, while in all American colleges an attendance upon the full college curriculum, extending over a period of four years in the best colleges, is required before a student can present himself for a degree upon which a license will be granted. So great is the American demand for a foreign degree or diploma rather than for a medical education obtained in a foreign college that it is very doubtful whether this custom of issuing degrees or diplomas upon examination alone will soon be corrected in the foreign universities which, while maintaining a high standard of actual college work, are equally as anxious to supply the American demand. If a degree in medicine, even from the best universities, is with good reason discredited by the German government and licensing boards, and also by some other foreign governments and licensing boards, there certainly should be the same reason for discrediting in this country that degree to the extent of also refusing to accept it as sufficient evidence of qualification upon which to issue a license.

3. The standard of requirements for graduation from medical colleges in this country, and perhaps also in European countries, would be increased as a consequence of provisions for a government examining board. In order to acquire such qualifications as would be required by this examining board and avoid the publicity of failure before a government board, students would attend only such medical colleges as give the best instruction and opportunities for study and have the highest standard of requirements for graduation.

4. The number of medical schools in the United States would greatly decrease, since students expecting to appear before this national examining board will not attend the colleges that do not give superior instruction and superior facilities for study.

5. Merited aid will be given to worthy medical schools that now require a high standard of education and desire to still higher advance the standard, since competition from low standard colleges will be eliminated. For this reason legislation favoring such a national board of examiners as is here suggested will doubtless be opposed by the low-standard college men.

6. The number of students beginning the study of medicine and of graduates engaging in its practice after a short period of study and without proper qualifications, would be greatly reduced, a higher and more uniform standard having in this an immediate effect.

7. This national standard of qualification would effect in many cities the consolidation of several medical schools now existing independently and endeavoring to outbid one another through a low standard of requirements for graduation, "not lived up to," but represented ostensibly to the public as a high standard.

8. It would make the practice of medicine and surgery more remunerative by lessening the number engaging in its study and practice, consequently the number of medical colleges and the number of free clinics that have the medical colleges as an accepted excuse for their existence.

9. General recognition of the necessity for a high standard of medical education and an enforcement of such requirements would doubtless induce some of the best medical schools to be changed to post-graduate colleges, fortunately emphasizing the fact that what we now need are more post-graduate schools and a smaller number of medical schools for undergraduates.

For the benefit of colleges desiring to give proof of the claim that their professors are qualified as teachers, and, furthermore, that the graduates of all sorts of American colleges (regular, homeopathic and eclectic) should not, as at present, have the same standing or recognition when they enter European colleges, it might be well for national legislation to further provide that, any candidate having first passed the general examination or possessing a license from any State, may at any time, upon passing a special examination in any subject or department in medicine or surgery or in sciences cognate thereto (as anatomy, physiology, chemistry, bacteriology, pathology, general surgery, etc.) obtain another degree or certificate of proficiency showing that he is qualified to teach or become a professor in that subject or department of science. The students who enter college to study medicine and surgery and the public who employ them as graduates and practitioners educated in these colleges are certainly entitled to that much assurance or proof of proper qualification on the part of medical instructors, and the faculty of any medical college that actually desires to advance the standard of medical education and the standing of the college itself should certainly hail with delight any plan by which to separate among medical colleges the chaff from the wheat, by which to prove that what is proclaimed in college catalogues and at commencements from the rostrum about thorough instruction is not mere bombast and advertisement.

661 Market Street.

THOUGHTS ON VITAL RESISTANCE TO DISEASE—IMMUNITY, NATURAL AND ACQUIRED.

Read in the Section on Physiology and Dietetics at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY G. W. FINLEY, M.D.

HARMONY, IND.

We occasionally observe individuals whose state of health, physically and mentally, seems so thoroughly perfect that they can and do pass through epidemics of virulently infectious disease unscathed. We observe a far larger number who prove themselves, for the time being at least, impregnable to exposure or even inoculation with germs of certain contagious diseases, and who yet fall easy prey to other diseases on slight exposure. The latter class are protected only as to certain germs, either by the fact of having previously experienced an attack of the given malady, or by some inherent quality in their own organization. In this consideration, the possible protection afforded by some extraneous circumstance, such as approximately perfect sanitary surroundings or the influence of chemic disinfectants, is supposed to be excluded.

This difference in susceptibility to infection, shown by different races of people, by different individual subjects under what is apparently the same environment, and by the same person at different times of life, must be accounted for on some physiologic principle. If that peculiar physiologic state constituting immunity to disease can be accurately determined, may it not be cultivated and induced for universal prophylaxis of disease in the twentieth century, as well as to suggest the most effective treatment of unavoidable cases, in the very practical present? We find that the various normal secretions and excretions of the body are essentially antiseptic in their nature and functions; that is, that while they carry off the waste products of the animal economy, they prevent the decomposition of the same until it is well out of the way, and they at the same time stand guard against the introduction of foreign or deleterious agencies. Not that these excretory fluids in their normal state are free from microörganisms, for, as a rule, they abound in the evidences of such life, but always of a fixed type. Interference with these secretions, either by mechanical violence, by internal drugging or even by the substitution of artificial sterilized fluids, is found to favor the reception of disease germs.

Through defective elimination of effete materials by the various excretory organs of the body, as the emunctories of the integument, the uriniferous tubules of the kidneys and the imperfect oxygenation of venous blood in the lungs, the circulatory system is heavily loaded with dead freight. All the elements necessary for the development of a greater or less degree of septic auto-infection are thus present, and the fire will rage unless it be effectually quenched by some vital resource ready at hand. If the powers of natural self-preservation prove at all equal to their task, however, we find that decomposition and absorption of resulting poisonous ptomaines will be delayed until elimination can at last be completed without harm. If one channel of elimination be effectually blocked, other channels will be called upon to do double duty, temporarily, and the work be accomplished before organic necrosis can occur as a result of the presence of foreign or poisonous substances.

We can aid the natural processes of elimination by many well-known remedies of internal, external and eternal application. Unfortunately, however, many of these empirical remedies leave the delicate organism thus stimulated weaker in action than before, thus finally tending to destroy one of nature's means of defense against the inroads of disease. In attempting by therapeutic measures to assist nature in the restoration of healthful functions, we must exercise particular care to avoid that extreme stimulation which is rather irritation and which, on reaction, paralyzes natural functions. We should also strive to add, if possible, to the natural antiseptic virtues of the excretory fluids to be manifested as the excretions clear the outlets of the body.

But whether it be dead material of the body's own waste, or toxic ptomaines produced by disease germs, natural resources, chief among which appears to be the multinuclear white blood-cell, at once make the attempt to neutralize the ill effects and to clear it away as quickly as possible. Unless suddenly overpowered by force of numbers of the invading foe, these natural resources of defense in the normal blood current will render inert, or expel from the system, whatever pathogenic germs may be introduced into its circulation. In this conflict between life and death, when life is gaining the victory and convalescence is established, the microscope reveals the fact of an enormous increase in the comparative number of white blood-corpuscles or leucocytes. This peculiar state of the blood is observed to be a constant and well-marked feature of all convalescence from acute disease. The question has occurred to the thoughtful physician that if leucocytosis could be artificially induced in an acute attack of disease, would not complete convalescence also occur early and before the patient had become debilitated by the ravages of the disease? Nay, might not the infection be prevented from developing at all, if nature's own means of defense in the leucocytes or phagocytes could be reinforced at the very beginining of the attack, or, still better, before the exposure to the deadly infection.

The ancient operation of transfusion of blood and other saline fluids, was a step in the dark, but a rational one, and in the direction of light. When applied to cases of marasmus and anemia, and where the care taken by the surgeon amounted to practical asepsis, the results were often very gratifying. The remarkable growth of the distinctly modern idea of sero-therapy may have owed its origin in some remote degree to the records of observations on transfusion. It is found that the immunity inherent to certain species of animal life may be borrowed and transmitted at will to other warm-blooded animals by means of injection of blood serum. Then, if natural immunity can be so readily and surely transferred to another, an easy and logical step leads us to the consideration of the cultivation and universalization of acquired immunity. Concerning a limited number of the best known and most dreaded infectious diseases, this beautiful dream of the bacteriologist now seems to be practically realizing. Behring, Roux and Aronson have identified their names with the work of producing artificial immunity to diphtheria by the use of a specially prepared blood-serum taken from an animal almost immune to the disease and rendered totally so by a process of cultivation of attenuated germs in the animal's system. These men, as also, in other parts of the world, Tait, Ehrlich, Pasteur, Koch and Kitasato, sought to place in tangible and practical form what had existed as a vague, but gradually clearing, theory among scientists during the last two decades.

Granting that pure blood serum contains the toxalbumin so effective in the animal economy during life, the question arises, Can its essential principle be isolated and preserved in a form less bulky than the serum and yet safe and effective for the physician's use in combatting, mitigating and even preventing the ravages of deadly infection? Our own original investigators, Vaughan, McClintock, Sternberg and others have demonstrated that it can be. Proceeding on the line of thought peculiar to the theory of cellular pathology, these earnest scientific philanthropists have sought and found a nuclein acting as the foundation of all Nature's defensive and offensive operations against the toxic ptomaines generated by pathogenic life. If a specific modification of the natural nuclein results from the experience of the body in undergoing disease it must be either by a gradual process of education of the individual cells to the end of more effective resistance to the germ of that

disease, or the multiplication on a grand scale of similar immunizing cells, the protecting influence of which may last for a term of years, if not for the remainder of the subject's lifetime.

We quote Professor Vaughan, of Michigan University: "A virus being introduced by any means into the living organism, the spleen is stimulated to action, and secretes a nuclein which is carried, partly in solution, partly in the form of multinuclear cells to the invaded part of the body, and the poison is converted into the nucelin coming into contact with it, or is otherwise rendered inert. Later, a larger quantity of the identical virus may be introduced, and now the spleen will act more promptly and energetically than before. This promptness and energy of action are increased by exercise until finally, an amount of virus sufficient to kill an animal, whose spleen has not been subjected to this training, may be taken without the slightest ill effect."

Not only is it proven that nuclein from blood serum possesses antitoxic and germicidal powers, but also that a nuclein isolated from pure cultures of the yeast plant has the same decided germicidal and antitoxic powers when brought in contact with germs of diphtheria. So, in the peculiar cells characterizing the normal tissues and glandular structures of the animal economy, as well as in those of the protean forms of vegetable growth, may we not find the various nucleins requisite for reinforcing the inadequate natural powers for defense of human life against the powers of death?

Dr. Bleyer of New York, Dr. Aulde, of Philadelphia, and others have found in practice that "nuclein possesses, in addition to its specific action, a dynamogenetic power, increasing the vigor of the central nervous system." It seems to produce and hold the beneficial effect of a pleasantly stimulating electric current. Indeed, it is a very probable explanation of physiologic action of all remedies, including the assimilation of all food and drink, that the well-known selective affinity of living cells, is in fact an electrical attraction, the one for the other, due to opposite polarity of the cell elements. The condition of ideal health is one of the most nearly perfect electro-equipoise, the happy subject of this condition being so well balanced that he is, Diogenes-like, composed in mind and physically fearless. The poor old philosopher in his tub, prizing the sun-bath above all royal favor, was right, though cynical, in declining the king's offer of the luxuries of wealth and asking simply that earthly royalty stand aside that the great source of all electric life-force might shine upon the bather.

Natural immunity may perhaps be most expected in the midst of ideal sanitary surroundings, and in those of reasonably regular habits, temperate in all things, yet of that sanguine temperament knowing no such words as discouragement or shrinking from duty. Trained nurses and busy physicians are familiar examples of immunity and longevity in this class. But, alas! the rank and file of modern population with inherited weaknesses, unsanitary homes, carelesss and vicious habits of life, are found sadly in need of artificial help in order to begin to help themselves on these lines. When we can offer them a protecting proteid nuclein, in addition to prophylactic sunlight and fresh air, cheerful and pure surroundings, judicious exercise of body and mind, together with sterilized food taken in moderation, may we not confidently hope to see the insurance actuaries' table of the expectation of human life raised to the level of at least a round hundred years?

The writer has, during the past few months used, with much gratification, a nuclein preparation in the treatment of cases of pernicious anemia, septicemia and general marasmus. It has seemed to offer most excellent assistance in the abortive treatment of incipient tuberculosis, but time, and multiplied cases must decide as to the sure or uncertain foundation of this hope.

SOME RECENT DISCOVERIES IN REGARD TO THE MODE OF ACTION AND CHEMISTRY OF COD LIVER OIL.

Read in the Section on Materia Medica and Pharmacy at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

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The mode of action and chemistry of cod liver oil has long been a subject of controversy, one side contending that the oil from the liver of the cod is "merely a nutritive agent having the advantage over other fats of a readier entrance into the system, and a more ready assimilation," and the other side contending that, "on account of some peculiar principle or principles it contains, cod liver oil exercises a stimulant and alterative influence on the processes of assimilation and nutrition, thereby aiding in the production of healthy tissue." It is a well-known fact that fat itself, when taken as a food, does not necessarily fatten, and that the fat of our bodies is derived from a conversion of proteids and carbohydrates, fat itself playing a very insubordinate part in the process. This is strikingly illustrated by the various diets recommended for the treatment of obesity. Ebstein considers that the formation of fat is chiefly dependent on the simultaneous free use of carbohydrates, but that the consumption of fats has little or no effect in the storing of fat in the body. He believes that the presence of fat in the food prevents the storing of fat in the body because it produces a feeling of satiety or satisfaction, and so leads to the consumption of less food; and also, by diminishing thirst, lessens the desire for fluids, the ingestion of the latter favoring the laying on of fat. Dujardin-Beaumetz points out the fact that Hypocrates anticipated Ebstein, and quotes his advice to the obese that they should eat fat on account of its satisfying effect and its virtues of lessening the consumption of food. Oertel advocates the use of fat for the treatment of corpulency, although he allows more albumin and less fat than Ebstein. Foster and other physiologists teach that the part played by fat in nutrition is that of furnishing fuel to the system for the production of energy, and that the fat stored in the body is manufactured by the body itself, principally from the proteids and carbohydrates, the fat playing an insubordinate part.

When cod-liver oil is taken, however, a rapid increase in the weight of the patient is often noticed, owing to the stimulating effect it has upon the process of metabolism. This is not a simple storing of fat but an increase in the muscular tissue as well. Some patients, however, gain rapidly in strength, without adding to their weight, especially when their body weight is not much below the normal. All these arguments are in favor of the view that the oil con-

tains some peculiar principle or principles which augment the appetite and stimulate the formation of tissues. Since 1822 chemists have endeavored to ascertain what principles exist in cod liver oil to account for its alterative effect. They have succeeded in isolating, from time to time, some fifty different substances from the oil, several of them being well-known alteratives. According to the United States Dispensatory, "From an analysis of the oil by De Jongh, it appeared to contain a peculiar substance named *gaduin;* oleic, physetoleic, palmitic, stearic and myristic acids, with glycerin; butyric and acetic acids; various biliary principles: iodin and traces of bromin. The formula of gaduin, according to De Jongh, is $C_{36}H_{66}O_6$. Dr. Luck has found a peculiar fatty acid in turbid oil, which he names *gadic acid*, and the same is obtained from clear oil by saponification. (*Neues Jahrb. für Pharm.*, vi, 249.) As, however, about 70 per cent of cod liver oil is olein, and about 25 per cent. is palmitin with some stearin, gaduin and gadic acid do not constitute a very important factor. Indeed, Flückiger considers their very existence doubtful. M. Chapoteau[1] claims to have discovered in cod liver oil a crystalline substance, *morrhuol*, containing phosphorus, iodin and bromin. He states that the brown oil yields from 4.5 to 6 parts in 100, the straw-colored from 2.5 to 3 parts, and the bleached oil from 1.5 to 2 parts. (*A. J. P.*, 1886, p. 19.) According to Dr. Lafarge (*Progrès Méd.*, Feb. 20, 1886; also process for preparing), this substance represents the peculiar medicinal properties of cod liver oil, and in tuberculosis and allied diseases may be given in capsules containing from three to five drops as about equivalent to one drachm of cod liver oil. By reaction with ammonia in distillation the oil yields a volatile alkaloid, *propylamin*, C_3H_9N, which has a strong pungent odor, recalling that of herring pickle, of which the same alkaloid is an ingredient. No other official fatty oils yields a similar product. (See *A. J. P.*, XXIV, 343.) Messrs. Gautier and Mourgues have obtained from cod liver oil the leucomaines butylamin, amylamin, hexylamin and hydrodimethylpyridin, and two fixed bases, asellin ($C_{36}H_{30}N_4$) and morrhuin ($C_{70}H_{72}N_4$). Asellin was found by its discoverer to be relatively feeble physiologically; morrhuin, of which about two milligrames are believed to exist in a tablespoonful of ordinary cod liver oil, is affirmed to have the properties of exciting the appetite and acting as a powerful diuretic and diaphoretic. Some have been disposed to ascribe the virtues of cod liver oil to its iodin and bromin; but these are in too small proportion for much effect, and the oil has produced results which have never been obtained from iodin and bromin themselves. The presence of iodin can not be detected by the usual tests. It is necessary to convert the oil into a soap, and to carbonize this, before it will give evidence of iodin. The proportion never exceeds .05 per cent., or 1 part in 2,000, and it is by no means certain that iodin is always, if ever, present in pure oil. The proportion of iodin present has been recently investigated by E. C. Stanford (*Pharm. Jour.*, XIV, 353), who found it to be extremely minute, ranging from .000138 to .000433 per cent., with an average of .000322 per cent. The oil is capable of dissolving a larger proportion of iodin; and, if any specimen contains more than .05 per cent., there is reason to suspect that iodin has been fraudulently added.

According to Gautier[2] and Mourgues[3] different factors unite in producing the undeniable reconstructive activity of cod liver oil. They state that "In the actual state of our knowledge upon the constitution of this celebrated medicament and upon the properties of the definite principles which enter into its complex composition it appears to owe its therapeutic efficacy and its powerful reconstructive action to the following group of agents:

1. "Cod liver oil acts by the fatty bodies, which are easily assimilated because of the slight acidity and partial saponification which can be attributed to the hepatic ferments; also because of the presence of biliary principles in solution, which render emulsification extremely easy, especially in the digestive tract, where it aids the action of the pancreatic trypsin. These easily digestible fats (namely, the fatty bodies already referred to) are ready for immediate assimilation, their ingestion resulting in storing the body with protective agents or reserve material to be utilized as needed by the economy to supply fuel for producing heat, etc."

2. "These oils act as energetic builders of tissue by their richness in phosphates, phosphoglyceric acid, lecithin and phosphorus in other organic states. It is known that under the last three forms the economy assimilates phosphorus most easily. This element is indispensable to the production of the nuclein of the cell and therefore to the proliferation of the cells. It is also known that these same forms of phosphorus preside more particularly over the activity of the highest cells in the scale of life; cells of brain, egg and embryo."

3. "The basic principles, already referred to, stimulate the nerve system, augment the appetite, accelerate intro-organic oxidation, and increase the secretion of urine and sweat. Morrhuin is the most important of the matters found in the extract. It is a powerful stimulant of the functions of nutrition and assimilation promoting metabolic changes. It produces a rapid circulation of the extractive residues of cell life toward the excretory organs, where they are eliminated, provoking in this way, indirectly, a powerful movement of assimilation (anabolism) correlative of the losses consequent upon the inverse movements of de-assimilation (katabolism). This is considered as proven by the super-excitation of the appetite of animals brought under its influence."

Under the caption, "Cod Liver Oil and Chemistry," a book has recently (1895) appeared, written by F. Peckel Möller and published by the firm of Peter Möller, the latter being the title of a well-known cod liver oil manufacturing establishment, whose office

[1] M. Chapoteau describes morrhuol in the following language: "An amber brown, bitter, aromatic liquid partially crystallizing at a low temperature, consisting of the free oleic acid of the oil, alkaloids and subtile combinations of sulphur, iodin, bromin and phosporus."

[2] Armand Gautier, born 1837, Doctorat à Montpellier 1862, Professor à la Faculté de Paris 1874, was, on the death of Chevreul, elected a member of the Section of Chemistry of the French Academy of Sciences to fill the vacancy thus created. This celebrated savant is distinguished for his work on the leucomaines. The first attempt at the systematic study and generalization of the basic substances found in living tissues was made by Gautier, who applied to them the name of leucomaines, a term derived from the Greek, signifying white of egg. Under this name he included all those basic substances which are found in animal tissue during normal life in contradistinction to the ptomaines, which are products of putrefaction. Gautier is of the belief that leucomaines are being formed continually and incessantly in the animal tissues side by side with the formation of urea and carbonic acid; and at the expense of the nitrogenous elements.

[3] Les Alcaloïdes de L'Huile de Foie de Morue par Armand Gautier, membre de l'Institut, Professeur à la Faculté de Médecine de Paris, et L. Mourgues, Préparateur particulier au laboratorie de M. A. Gautier, Paris, G. Masson, Editeur. C. Braire de L'Académie de Médecine, 120 Boulevard Saint Germain, 1890.

is located at 43 Snow Hill, London, E. C., and at Christiana, Norway. This book is for the purpose of exploiting cod liver oil manufactured by a new process which has been patented by Peckel Möller. This authority claims that, "The therapeutic action of cod liver oil is one entirely its own." The "real value of the remedy lies in the fatty acids which it contains, in the form of glycerids." According to the researches of his chemist, Mr. Heyerdahl, cod liver oil contains no olein or stearin, but consists of several glycerids, 40 per cent. of the oil being made up of therapin and jecolein, the list of glycerids consisting of one or more unsaturated acids belonging to the same series, but hitherto unknown to chemists. Möller's patent process consists of preparing the oil in an atmosphere of carbon dioxid to prevent the glycerids from being acted upon by the oxygen of the air and forming hydroxy-acids. He claims that the eructating of cod liver oil is due to the presence of these hydroxy-acids, and that their formation is the real cause of the rancidity of the oil. For the purpose of diminishing the demand which has recently greatly increased for extracts made from cod liver oil, and containing the principles to which its alterative effect has been ascribed, Möller attacks in a savage manner those who are interested in advocating the various extracts referred to, claiming that all the substances found in the oil by eminent chemists, except the fatty matter, are the essence of rotten livers and are due to putrefaction. Several other houses who are exploiting the plain oil and preparations of the same, such as emulsions, etc., have joined forces with Möller for the purpose of driving out the extracts such as morrhuol, jecorol, etc., made from cod liver oil or from the cod livers themselves.

A field in which there is so much controversy is surely an inviting one for original investigation. The following pages are devoted to a report of investigations in this field under my own direction. We[4] commenced with a careful inspection of the methods of preparing the oil, both in this country and in Norway. Preliminary to this, however, we corresponded with the leading manufacturers of cod liver oil in the world,[5] and accumulated as much information as possible on the subject. Guided by the information thus acquired we commenced operations by going out with the fishermen on the fishing boats, off the coast of Massachusetts, and inspected their methods of catching the cod, collecting the livers and preparing the oil. After watching these operations we concluded to try some experiments in cod liver oil manufacture ourselves. Accordingly we rented a room and fitted up a laboratory for the purpose. After finishing our experiments at the fisheries we collected some fresh livers, preserved them in alcohol, and shipped them to our laboratory in Detroit for further experiments. The results of these experiments were surprising and are so different, in some respects, from the information furnished us by the standard text-books, and so completely disprove the position of those who traduce the extracts made from cod liver oils and from the livers, that we consider them of sufficient importance to bring before the ASSOCIATION.

The principal cod fisheries of the world are seen at the Islands of Lofoten, off the coast of Norway. A great many cod are also caught off the coast of Iceland. In North America we have the Newfoundland and New England fisheries. Codfish are also taken on the banks of the British Islands, but not in commercial quantities. Russia sends more or less into the market, and a fine quality of cod liver oil is now made in Japan and marketed by Cocking & Co., of Yokohama. The Lofoten Islands form part of an extensive group of islands stretching down the Norwegian coast, numbering probably several thousand. The name Lofoten Islands is applied to the four islands forming the apex of the entire group, although officially only their southeasterly shores, facing Vestfjordan and the mainland, bear that name. The Lofoten Islands lie in the Arctic circle between latitudes 67 and 69, and are separated by narrow sounds, the islands themselves being covered with great snow-clad mountains, and giving some of the grandest scenery of the world. The supply of fish in these regions is something perfectly enormous. To illustrate this a story is told of how a shoal entered one of the fjords of East Vaago early in January, 1887. The fishing boats numbering 2,500 soon congregated at the spot and were successful in catching over thirteen millions of fish, this number, however, being a mere nothing as compared to the total in the shoal. The number of fish in this shoal was estimated to be about ten thousand million, and when it is considered that this shoal was only one out of possibly hundreds of shoals on the banks, the number of fish are beyond computation. The female codfish produces every year about one hundred thousand eggs for each pound of its weight; so that on an average each fish is responsible for a family of one million two hundred thousand fish every season. Only for inroads made upon the young fry by the whale and other denizens of the deep, the entire ocean beds would be completely choked with codfish in a few years. The output of the Norwegian fisheries, all told, is between forty and fifty millions of fish annually, yielding between fifty and sixty thousand barrels of oil.[6] When to this is added the output of all the other cod fisheries of the world, the amount of cod liver oil manufactured in a year is simply enormous. Much of the oil, however, is used in the arts, being extensively employed by the tanners, etc., and only part of it is used medicinally. The methods of preparing the cod liver oil are the same in principle in all parts of the world. The pale yellow oil is prepared by submitting the livers to a jet of steam let into a conical vat, that has been filled with the fresh livers, for half an hour. The oil is filtered warm from the melting vat. The stearin is then separated by refiltration at a temperature somewhat below the freezing point. The various varieties of brown oils are prepared by exposing the livers to the heat of the sun, which expands and

[4] I do not use "we" editorially, but in reference to our Scientific Department, which consists of F. E. Stewart, M.D., Ph.G., director; chemistry, C. C. Sherrard, Ph.C.; materia medica, L. H. Gardner, Ph.C.; pharmacognosy, F. H. Frazee, Ph.C.; therapy, F. E. Stewart, M.D., Ph.G.; botany, W. G. Rankin, Ph.C.; pharmaceutic assaying, J. L. Tetzarden, Ph.C. Much of the chemic work has been done by Professor Sherrard, who had also associated with him Prof. J. O. Schlotterbeck, in charge of the department of pharmacognosy and materia medica of the University of Michigan. Sherrard and Schlotterbeck have worked together part of the time, and at other times have worked separately for the purpose of verifying each other's work. We have also to thank Prof. A. B. Prescott, Dr. C. D. Morris, assistant to Dr. Novy, and other members of the faculty of the University who have aided us in verifying our observations. The credit for the work, therefore, should be given to the Scientific Department of Frederick Stearns & Co., aided, as aforesaid, by members of the staff of the University of Michigan.

[5] The manufacturers with whom we corresponded relative to the method of preparing cod liver oil included Isdahl & Co., Bergen; Peder Devold, Aalesund, Norway; Joh. Kye Holmboe, Tromsö; Fob. V. Borthen, Trondlyem. Cocking & Co., Yokohama, Japan; and the leading manufacturers of cod liver oil in Newfoundland and New England.

[6] Cod Liver Oil and Chemistry. F. Peckel Möller, Ph.D., London, 1895.

bursts the oil cells. The first oil that floats to the top of the cask is quite pale and is known as raw medicinal oil. The second skimming is rather yellow and with a strong taste and smell, and is the light yellow oil employed for industrial purposes. The third or last skimming is a dark brown oil with a very strong smell and disagreeable taste, and is used exclusively for tanning purposes. It is generally supposed that the brown color of the darker varieties of oil is due to the products of putrefaction. This, however, we find not to be the case. It has also been charged that many of the substances found in the oil, to which its therapeutic efficacy has been ascribed, are also the products of putrefaction. This has been applied particularly to the leucomaines discovered by Gautier and Mourgues in the oil, the opponents of these scientiets contending that the organic bases referred to, instead of being formed during the life of the fish, are ptomaines or cadaveric alkaloids resulting from putrefying livers. While it is true that several of the substances found in the oil are undoubtedly ptomaines, such for example as propylamin, to which the marvelous virtues of the oil have been ascribed by some of the best writers, yet we find that the bases discovered by Gautier and Mourgues occur in the fresh liver taken from the live fish. This fact has been noted by Bouillot as well as ourselves, and is true without question, as will be more apparent when our experiments are described in detail. The largest manufacturers of cod liver oil in the world is the firm of Isdahl & Co., Bergen, Norway. Their integrity is beyond question, and their well-known Midnight Sun brand of pale straw-colored oil commands the highest price of any of the cod liver oils on the market. In response to our letter making inquiry in regard to the manufacture of cod liver oil they state, under the date of Sept. 5, 1894, as follows:

In reply to your favor of the 8th ult. in relation to our light brown cod liver oil, we beg to inform you that for more than thirty years our firm has made a specialty in the way we prepare it of a sweet-tasting, light brown medicinal oil. It is quite a natural oil, which obtains its dark color from the length of time it remains on the livers, as we use only selected livers in its preparation. The ordinary brown cod liver oils to be got in our markets are prepared from the remainders of the livers after the natural yellow-colored oil has been skimmed off, and are only fit for tanning purposes. After this explanation you will understand that the light brown cod liver oil which we prepare has the same active medicinal principles as any other cod liver oil, and it may be still richer than any of them in alkaloids. We believe that its taste is more pleasant than the flat and insipid taste of the straw-colored oil, and we know from experience that a great many people for this reason give it the preference. This variety of oil may be sold under the title of Isdahl's Light Brown Lofoten Cod Liver Oil. Of course no American house has more right to the title of 'Lofoten Oil' than anybody else, although it is right to lay stress on the title Lofoten Oil, as the best oil produced in Norway comes from that district. We prepare our special brand of light brown cod liver oil from selected Lofoten cod livers only.

EXPERIMENTS ON COD LIVERS AND COD LIVER OIL.

The following experiments were undertaken for the purpose of proving that the color of cod liver oil is not due to a putrefactive process occurring in the livers from which it is derived and also for the purpose of proving that the 5 per cent. of extractive matter found in the oil is not putrefactive in its origin.

Experiment 1.—The fresh liver of a cod was taken and a section of it examined under the microscope to see whether there were any bacteria present. It being determined that bacteria were not present, incisions were now made in the liver and the oil was allowed to exude spontaneously. The oil thus derived from the fresh liver was of a pale straw color.

Experiment 2.—The liver of a cod was exposed to the air until, under the microscope, the presence of bacteria was determined. Incisions were then made in the liver and the oil that exuded was of a pale straw color as before.

Experiment 3.—A batch of fresh livers was taken and examined by the microscope to prove the absence of bacteria. This batch of livers was now placed over the water bath at a temperature of 50 to 60 degrees C. for seventy-two hours. Every twenty-four hours examinations were made of the liver with a microscope to see whether or not bacteria were present. During this time the following changes were observed to occur in the liver substance: The parenchyma commenced to disintegrate and became a pultaceous mass. During this process of disintegration the color of the liver parenchyma changed gradually through the various shades of brown until it became almost black. The oil remaining on the livers little by little took up this coloring matter and were darkened in proportion. By this means we were enabled to obtain cod liver oils from the same batch of livers of every shade of color on the market, simply drawing it off from time to time when the desired shade of color had been reached. While conducting experment 3 the liver was examined from time to time to ascertain whether any bacteria were present, and during the entire time, from the beginning to the end of the experiment, no evidence of bacterial action was observed. For the purpose of having our observations verified, we sent specimens of the livers we were working on to the University of Michigan, and there had them examined with a thirteen hundred power oil immersion, and also had cultures made, the results being entirely in accordance with our observations in Detroit.

It is evident from Experiments 1 and 2 that the presence of bacteria does not determine the color of the oil, as a pale straw colored oil can be made from livers containing bacteria, as well as from those free from germs. Professor Sherrard mentions that he has seen at the New England fisheries light colored oil exuding from livers far gone in decomposition. Experiment 3 shows that oils of all the different varieties of color found on the market may be manfactured from fresh livers without the intervention of bacteria.

The next series of experiments were for the purpose of determining the presence of the leucomaines[7] of Gautier and Mourgues in the various samples of the oil just manufactured. Their presence was easily demonstrated in the samples. The pale straw-colored oil contained but a small amount. The light brown oil contained a larger proportion than the darker oils. From this and other experiments which we have carried on with samples of oil made by different manufacturing houses and by close study of our own processes, we infer that in the preparation of the light brown oils a larger proportion of the leucomaines is found than in the pale oils or the darker varieties, for the reason that in the former case the liver parenchyma containing them is not disintegrated while in the latter instance the long continued

[7] The process for determining the presence of the basic substances discovered in cod liver oil by Gautier and Mourgues is published in their monograph entitled, "Les Alcaloides de l'Huile de Foie de Morue."

action of heat has resulted in the decomposition of these organic bases. In our investigations many hundreds of samples of cod liver oil from every known commercial source have been analyzed. With the possible exception of cod liver oil prepared by Peckel Möller's new patented process, which we have not examined, we find that all the cod liver oils on the market contain more or less extractives, including the organic bases of Gautier and Mourgues, and that, while the dark brown oils contain more extractive matters than the light brown oils, yet the former are richer in the leucomaines than the latter. The probable reasons for this have just been stated.

The question naturally arises, What is the reason for the change in the color of the livers when exposed to the action of light and air. This subject is one requiring further investigation. Prof. A. B. Prescott, of the University of Michigan, with whom I talked on the subject, suggested that it might be a process of oxidation. That it is not due to action of bacteria is evident from what has already been said. The change in the color of the livers may be due to the same process that darkens the surface of freshly cut meat or gives to dried beef its rich brown color. A freshly cut apple darkens on exposure to the air. The dark brown color of opium is in strong contrast to the milky color of the fresh juice of papaver somniferum. Prof. Dolbear (as quoted in *Food*) says that the tanning of the skin, the darkening of newly laid shingles, and the coloring of apples and other fruits, is all a "photographic process."

That cod livers readily putrefy is not true. Even when exposed to the atmosphere for some time no bacteria appears in them. Just how long they can be thus exposed we have not yet determined. It is well known that bile processes some antiseptic qualities. As Foster says, "Out of the body its presence hinders various putrefactive processes; and when it is prevented from flowing from the alimentary canal, the contents of the intestines undergo changes different from those which take place under normal conditions, leading to the appearance of a variety of products, especially of ill-smelling gases." The antiseptic power of the bile is said to be due to the presence of glycocholic and taurocholic acids. It is evidently due to the presence of bile acids that the livers are not readily decomposed when they are exposed to the air. Carvalho and Pachon (*Archives de Physiologie*) have recently reported the results of their experiments on a dog deprived of his stomach. Among other things it was found that the dog thoroughly digested rotten meat, the same as a healthy dog. This is accounted for by them by the great antiseptic value of either the bile, or the intestinal fluids, or that the liver, spleen and perhaps other organs, are capable of destroying large amounts of ptomaines.

It is evident from the above experiments that the information in regard to the chemistry and manufacture of cod liver oil in our text books is, to a certain extent, erroneous and should be revised. It is also evident that all of the substances found in cod liver oil are not the products of putrefaction, as has been claimed by those interested in exploiting the plain oil and its preparations. It has been demonstrated that cod liver oil contains certain leucomaines and organic bases which, upon physiologic examination by their discoverers, Gautier and Mourgues, proved to be powerful stimulants to tissue metabolism. It has been shown that fat itself has no such stimulating properties, and it is therefore reasonable to infer that this effect is due in a greater or less degree to the presence of the organic bases referred to. Other leucomaines exist which possess very similar properties. The leucomaines creatin and creatinin for example, found in lean meat, extract of beef, etc., are stimulants to the processes of tissue metabolism, and are now considered by Foster, and other physiologists, necessary ingredients of the diet, their office being to assist in the assimilation of proteids. The mistake has been in supposing these extractive matters to be nutrients. When it was proved that they were stimulants only, a reaction against them occurred, and the profession made a serious blunder in dropping the use of bouillon, beef tea, extract of meat, etc. When employed with a proper diet, consisting of the requisite quantities of proteids, carbohydrates and fats, they are powerful aids to the appropriation of food in tissue building. Further experiments in connection with the work on cod liver oil should be undertaken to demonstrate whether we are not making another mistake by employing oils from which the extracts referred to are left out. We have demonstrated that they are not necessarily the products of any putrefaction and that oils can be made, rich in extractive matters, from cod livers in which bacteria take no part. If it is proved that Isdahl, De Jongh, and other manufacturers of the light brown oil, are correct, and that their virtues are superior to the pale straw-colored varieties on account of the presence of the leucomaines of Gautier and Mourgues, and other active principles not found in the pale varieties, then methods for standardizing cod liver oils should be adopted for the purpose of securing a proper proportion of these substances therein. Further experiments should be made with the extracts, upon tissue building, in connection with the various classes of food. There are good reasons to suppose that in a large number of cases other fats may be substituted for the disgusting fat of the gadus morrhua, the same to be taken in conjunction with these extracts. Butter, cream and the fats of meats, etc., are much more agreeable than the fat of the cod liver, and, when combined with the powerfully stimulating extractive matters derived from the fresh liver of the cod, may prove valuable substitutes for cod liver oil. Morrhuol, one of the extracts made from the oil, has already acquired quite a reputation, and, if properly employed in connection with the right kind of diet, might prove still more efficacious. We manufactured some of the extract from the oil, by the process recommended by Gautier and Mourgues, and placed it in the hands of Dr. E. L. Shurly, of Detroit, to experiment with in the Harper Hospital. The results of his experiments have been published in the Harper Hospital Bulletin for April, 1893, and are as follows:

"The favorable reputation of cod liver oil, as well as other animal oils (such as cream, eulachon oil, etc.), as a means of treatment of phthisis pulmonalis is too old and widely known to need comment. It is equally notorious that very many phthisical patients, suffering with even a moderate degree of anorexia can not take these oils, either pure or in the form of emulsion. Therefore the medical profession has been ready to hail with delight any preparation or combination which might be presented that would enable patients suffering from phthisis pulmonalis to

receive cod liver oil without untoward effects. Whether the real value of cod liver oil and eulacohn oil rests with the extractives or the oily portion, is a question; but many have believed all along that the extractives contained iodin, etc., were the constituent of particular value. Hence, when so-called morrhuol or other extracts were first put upon the market several years ago, they soon found a favorable reception, especially from those practitioners who relied so exclusively upon cod liver oil as a medicine and nutrient for wasting diseases." Dr. Shurly goes on to say that: "There is no doubt, from our experience, that the cod liver oil extracts are fully as efficacious in the majority of cases, and far superior in all cases marked by feeble or fitful digestion." Then follows a description of cases in which Dr. Shurly employed our alcoholic extract of cod liver oil containing the combined active principles extracted from the oil. This extract was given with excellent results. The Doctor then sums up the cases by saying: "It seems apparent that these preparations are of considerable value, especially in those cases of phthisis pulmonalis which exhibit marked and persistent disturbance of the stomach and small intestines. Whether their effects depend solely upon their nutritive value or upon some selective action upon the peripheral nerves or capillaries can not now be determined."

Various other experiments were conduced with this extract in combination with wine and peptonate of iron by Drs. Chittick, Manton, LeSeure and Duffield, connected with the Detroit hospitals. The limits of this paper, however, will not permit us to consider the matter at greater length. We hope, however, in a subsequent paper to give further information on this interesting subject.

In this connection it may be well to state that associated with me in this work on cod livers and cod liver oil have been Prof. C. C. Sherrard, of the Detroit Medical College, the chemist of the scientific department of Frederick Stearns & Co., and Prof. J. O. Schlotterbeck, of the University of Michigan, who has done a good deal of work for us on the subject.

PHARMACY IN MEDICAL SCHOOLS.

Read in the Section on Materia Medica and Pharmacy, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

HENRY PARR HYNSON, PH.G.

BALTIMORE, MD.

I am led to present a paper upon the teaching of pharmacy in medical colleges for somewhat selfish reasons. This selfishess is not, however, that of the individual but is the kind which seems laudable in a loyal member of the pharmaceutic brotherhood. From the standpoint of the pharmacist, I believe a better knowledge of pharmacy, its truths, laws and practices would be greatly advantageous to medical men. This seems but a logical conclusion, arrived at through and by the acknowledged principle which makes the best and most thorough knowledge of a person, a thing or a theory, the only proper quality for justly and fully estimating the value of any of these. Does this not bring to a number of my honest hearers on "the other side of the house" the question, Am I in a position to do justice to this profession? Or, as I would rather have you style it, this branch of your profession, which has so thoroughly established itself in our midst during the last fifty years as evidenced by its separate colleges, its special schools connected with our larger universities; by its current literature, which has grown from a small beginning in 1857 to very large proportions, devoted to pharmaceutic advancement and reports of scientific research and investigation; by its great mass of permanent literature; by its model text-books, all resulting in the preparation of men who practically edit your pharmacopœias and dispensatories, composing a large proportion of the actual workers in pharmacologic research, which looks so strictly toward a thoroughly scientific and rational materia medica. But while we make these seemingly boastful claims, we at once make due acknowledgment to medicine proper, our mother, if she will allow it, and freely admit we are entirely dependent upon her encouragement, her help and especially her just appreciation to give us the force, the confidence, the stimulus to push still further on, finally winning a creditable position among the special branches of your profession or, if not so much as this, establish a separate one whose ethics, practices and accomplishments will give it a fair standing among its sisters. We are contending that nothing will be so helpful to us as a stronger encouragement and better recognition by the medical profession and we are sure these will come to us in no more certain way than through a broader acquaintance with our claims. How this greater familiarity with the scientific and practical elements of pharmacy can be secured seems a matter easy of solution; simply give it a place, a regular full-fledged place in the curriculum of your now extended course of medcine. In making this suggestion or appeal, as you like, I do not overlook abuses, wrongs, inconsistencies, perversions or almost any charge that may be brought. You must not forget that the "black sheep" are the conspicuous members of the flock, they are black spots, and again, it is only he who is without sin who can cast the stone. No class of men know better than yourselves the effect of good strong healthy growth brought about by changed environment. How it will push aside, absorb or eliminate irregularities and malformations, which found life and place where surroundings were bad and food poor. This much we would gain by a thorough teaching of pharmacy in medical schools—strength, encouragement, a fair appreciation, a more certain and healthier growth from improved environments.

Now, what would be *your* gain? Could I get into words the advantage a physician who has a thorough knowledge feels he has in this particular line over his brother who can make no such claim, I would need write no more. Pharmacy must of necessity be practical to be valuable. Its practices are largely made up of the intelligent and skillful application of many of the facts and theories of established sciences. It is truly said, it is not so much the accumulation of knowledge as its application that makes a man great, a truth, indeed, regarding pharmaceutic attainments, which compass a broad scientific training and includes much we find in mineralogy, botany, zoölogy, together with a number of branches already included in the studies of the medical student, particularly practical chemistry, comprehensive materia medica, applied physics, some anatomy, physiology and microscopy. The study of pharmacy will help the medical student by bringing about a direct application of his knowledge through the varying reactions and combinations which occur during pharmaceutic manipulations. Surely it gives him a

more thorough knowledge of materia medica, since it comprehends the source, collection, preservation and preparation of drugs. It helps him in therapeutics, since he must become familiar with the exact composition of compounds, and by a more accurate understanding of the peculiar characteristics of medicinal substances generally. With this knowledge and by it he may arrive at conclusions regarding the peculiar effect of drugs, which would be perfectly impossible without it. For instance, the marked difference between the action of potassium or sodium oxalate as compared with iron or cerium oxalate. Quite clear to one knowing the pharmaceutic characteristics of these salts, and yet the application of these truths and principles gained through following other avenues is not all one finds in pharmacy. To be a good chemist, an enthusiastic botanist or one thoroughly familiar with the ordinary materia medica does not by any means constitute an efficient and competent pharmacist. Nor does it offer a medical man a sufficient acquaintance with this branch, although often the usual requirements of a physician are too frequently supposed by himself and his patients to better fit him for the preparation of medicine, than is the capable graduate of pharmacy. There are so very many important actions, effects and results occur which are due entirely to physical peculiarities and can be controlled only through pharmaceutic management. Where, except through a course of pharmacy, can the medical student learn of these possibilities? Notwithstanding the tendencies of the times, regarding drugs, lead almost to their entire disuse, which is simply that stroke far to the other side, and which, it seems, must be made before a proper settling is ever reached; notwithstanding this want of faith, there are times left when a physician must needs do something looking to the relief of his patient other than to regulate his diet, improve his surroundings, reduce his temparature by ice-water, cure his stomach ache by removing his appendix or overcome hysteria by ovariotomy. These simple (?) remedies are not sufficient at times to meet requirements or to satisfy the patient's demands for corrective treatment. If, indeed, drugs have yet to be used, does it not follow, to be consistent with the advances made in other direct lines, that they should be intelligently handled? Is there not more empiricism in the use of medicine than in any other branch of the profession? If empirical practice have lessened and are vanishing, have they not disappeared before the light of a better and surer knowledge? And before this same certain light will the mist so long clouding the use of medicines disappear. He, among you, who would even in this day of skepticism deny that there are a few real specifics would be most surely regarded as, at least, eccentric. If there is worth in a few agents discovered by a thorough and certain investigation of their action and characteristics, is it not possible that more of them may be established, provided they are skillfully prepared, of definite strength and always uniform in potency? I have been trying to show that a practical knowledge of pharmacy is necessary for the physician who poses as an advanced member of the profession. No one can doubt how valuable it is to those who are fond of remedies. It would be tedious to go into details of the help they would have at hand through this source. The tendencies of the times are favorable to the adoption of a pharmaceutic course in medical schools. To ascertain to what extent the branch is now taught I addressed a note of inquiry to the proper officers of twenty-five of our principal medical colleges inclosing an addressed card for reply. Only nine of these came back, and I conclude from the silence of the other sixteen that they were ashamed that no advances have been made in this line. Adding to this nine our Baltimore's own colleges, five, we have fourteen from which to draw conclusions. Of these, five teach pharmacy separately or in connection with materia medica; three in connection with schools of pharmacy; six do not claim to teach it at all. One alone examines and makes a satisfactory stand a requisite for examination, and as I have the honor of being connected with this institution I can bear testimony to the great interest taken by the students and the willingness with which they undertake the study owing to the extended advantages gained thereby. These facts seem encouraging; certainly they are when we remember that the idea is almost new. Concluding, we sum up, believing to have shown: 1, that pharmacy would be greatly helped and improved if better understood by medical men; 2, that medical students would derive signal and peculiar advantages from a thorough study of pharmacy, followed by an examination; 3, that both advanced and conservative medical men would find in pharmacy means to better attain their ends; and finally, that general medicine would gain largely through the teaching of pharmacy to students of medicine, since it must of necessity bring about an improved, more dignified and ethical materia medica. As it is now, if I can be pardoned for the assertion, many medical men are simply made dupes of by enterprising manufacturers and their representatives. They are constantly made to believe there is a real difference between tweedle-dee and tweedle-dum. Wonderful variations are *shown* and accepted, between the action of one firm or another's preparation of some substance which is as fixed and as certain in its effects as anything can possibly be.

The physician thoroughly taught in pharmacy is never the material that the promoter of new and mysterious pharmaceutic products seeks or one with whom he is successful in inducing to use his really claimless compound. Doing away with this endless nameless class of remedies, which in almost every instance after a time play the part of the old-time patient, would be of incalculable benefit to medicine proper. Abolish the use of these proprietary products and unscientific compounds and the last vestiges of empiricism will go with them.

ADENOMA SEBACEUM.

Read in the Section on Dermatology and Syphilography, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY W. E. MAXWELL, M.D.

PORTLAND, OREGON.

Mr. C., age 31, single; traveling salesman; American parentage; healthy, well developed and of fair intelligence; habits not strictly temperate; raised in moderate circumstances; no epilepsy or other nervous troubles known in his family.

Beginning about half an inch below the right ear and posteriorly, running obliquely downward and backward across the sterno-mastoid muscle, is a

double parallel row of closely connected but distinct, averaging pin-head-size papules, on a slightly elevated red base, measuring one inch long by one-fourth inch wide, but somewhat narrower in its middle from arrested development and slightly bent upon itself as if broken, but not disconnected. This patch presents an irregular, rough surface of twenty-seven distinct but closely connected papules, each surrounding the dilated orifice of a sebaceous follicle, from which a slender, thread-like sebum can be expressed.

The summit of each papule is paler than the base on which it rests. The base itself is a shade redder than the surrounding surface, which is a light crimson and finely punctated, being made up of innumerable small dilated vessels. Below this patch and at its lower end and separated only by a narrow strip of normal skin, is a group of five papules similar in every respect to the patch above, but less distinct. Both patches are devoid of hair growth. No comedones near, although the papules would suggest a cluster of comedones if not for the circumscribed elevated red base.

This growth was not noticed at birth, but was in early infancy, and is said to grow redder at times. The papules have not decreased or altered in character in any way since first noticed, and he is not positive as to any increase either in number or size of papules.

Presenting himself for treatment Feb. 14, 1894, electrolysis was tried as described by Crocker in his work on skin diseases. The needle was attached to the negative pole of a galvanic battery and inserted well down into the orifice of each papule and in the larger ones making two or more insertions. Three to four milliamperes of a McIntosh galvanic battery were used. This was tried three or four times at irregular intervals, the last being August 1 following.

In December following, seeing no results from the electrical treatment and the striking similarity in the arrangement and external character of the papules in this case to the case so thoroughly studied and reported in the *Journal of Cutaneous and Genito-Urinary Diseases*, December, 1893, by Dr. Politzer, in which he obtained such satisfactory results by scarification, commended this treatment to me. My patient's limited time, however, from business relations, justified a more active procedure on my part.

The upper patch was now curetted to a point just below the level of the normal skin surface. The tissues showing quite a fibrous resistance and slightly more vascular than normal. It soon healed with a smooth pink cicatrix.

In March, 1895, he returned to my office to consult me as to an unlooked-for behavior in the cicatrix, which was likely to become more unsightly than the original growth. It had assumed somewhat the appearance of a hypertrophied scar. He was told that it was probably (?) a beginning cyst formation and advised to report later. On his return in April a very slight increase in size could be observed. It was punctured in several places, but nothing more than blood escaped. It had not felt sore nor painful at any time. The lower patch was not curetted and remains as first seen. Under his right eye was a varix about the size of a pea, which has been obliterated by electrolysis. A few telangiectic vessels of small size can be seen on left side of his face and one above left eye. He says tumors have been known in his family, but the nature of which he could not tell. No microscopic examination has been made. The diagnosis given is on clinical grounds.

Whether a return to the original condition to which it at present bears no likeness, or hypertrophied scar or keloid will be the result of treatment, I will know later. Except the occurrence of cystic and colloidal degeneration in the growth, I find no report of the return of any other than the original growth from incomplete removal.

The clinical behavior in this case bears some points in common to cases reported by Crocker of congenital fibro-sebaceous disease, more especially the one referred to him by Bilton Pollard in 1890:

1. In its probable congenital origin.
2. Its changeable color at times.
3. Its slightly elevated base.
4. Being devoid of hair where hairs normally exist.

It differs from Pollard's case, however:

1. In the larger size papules; the follicular openings in the papules with the sebaceous contents.
2. The absence of comedones.
3. The presence of telangiectases near and remote.

Of the few unilateral cases reported, this is the only one away from the face and on the neck. It is the first American and second case reported in America, and is reported for its rarity, its unilateral and unusual location and yet unsettled termination.

I now propose to make a section of it when its further pathology will be studied. Its location and definite arrangement, even for cosmetic effects, would have justified it at first.

Later: The new growth is keloidal.

SYPHILITIC ULCERATION OF THE RECTUM.

Read in the Section on Dermatology and Syphilography at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY JAMES P. TUTTLE, M.D.

ADJUNCT PROFESSOR OF SURGERY AND LECTURER ON DISEASES OF THE RECTUM AND ANUS IN THE NEW YORK POLYCLINIC.

While syphilis is acknowledged to be the most frequent cause of stricture of the rectum, and the profession at large are well posted as to this fact, I have been surprised in post-graduate teaching to find how little the modus operandi of its production is understood, and how little the prodromic and precursive conditions are appreciated.

I do not propose in the present paper to discuss stricture of the rectum in a general way, as this would lead me into too wide a field. In order, therefore, to make plain the bearing of my remarks it may be well to state at the outset that I have little faith in any syphilitic stricture of the rectum, that has not been preceded by ulceration of that organ. Gummata may produce narrowing of the canal as in the cases reported by Zapula (Arch. f. derm. und syph., Prague) and Molliere, but certainly it is very rare. The condition described by Fournier as ano-rectal syphiloma is said to have been seen by numerous observers, but there is no positive proof that ulceration had not preceded the infiltration, which is its chief characteristic. If the doctrines of Fournier on ano-cretal syphiloma, and Trelat on quartenary muscular infiltration and atrophy are correct, there is no anatomic or physiologic reason why we should not have similar strictures all along the alimentary canal just as frequently as at the rectum, which we all know we do not have. Ulceration is in my opinion, then, the almost invariable precursor if not the cause

of syphilitic stricture of the rectum and is, therefore, the important element to be understood; the essential condition to be diagnosticated.

When once the muscular wall has become infiltrated, its fibers atrophied and the interstitial tissue becomes sclerotic, there is no longer any hope of curing the stricture. Our only course then is palliation or resection. When the condition is recognized in its early ulcerative stage, before the above lesions have taken place, much may be done; indeed, the large majority of the patients may be cured. With this exalted view of its importance, I thought it not unfit to bring before this society a brief discussion of the clinical characteristics and course of syphilitic ulcerations of the rectum.

We may hastily run over, without discussing, the syphilitic manifestations about the anus, such as chancres, condylomata, erythema, secondary skin lesions, deep ulcerations, the result of friction and uncleanliness of the parts, fissure-like cracks, dry, brittle mucous membrane, mucous patches, etc. These manifestations occur early in the course of syphilis, indeed, they are generally associated with the secondary skin eruptions. Where they have a tendency to advance rapidly, and to great destruction of tissue, they are generally associated with some profound constitutional disturbance, such as nephritis, cirrhosis of the liver, or tubercular diathesis. These conditions should be borne in mind and inquired into with the utmost precautions. These secondary manifestations about the anus are important in themselves, but not pertinent to the point we have in mind. They are not likely to be overlooked and their nature is generally apparent. They are, consequently, treated early and cured before much damage has been done. These facts will explain in a large degree why we so rarely have syphilitic stricture of the anus. It is within the external sphincter that we find the dangerous ravages of specific ulceration. Van Buren said years ago, "When we consider how rarely the rectum is carefully explored, except when painful symptoms render this measure necessary, and that secondary eruptions are usually painless, the absence of recorded cases of secondary ulceration is not difficult to understand; while the common occurrence of secondary syphilitic manifestations at the other end of the alimentary canal—in the mouth and throat—justifies the assumption that they also occur if not so frequently, in the rectum."

We are examining more rectums now-a-days and find that the predictions of this eminent teacher are more than justified. I shall not depart from the ordinary divisions of primary, secondary and tertiary lesions. The initial lesion is rarely seen in the rectum; first, because, as I believe, it is very infrequent, at least in this country, and second, because it produces so little disturbance if within the mucocutaneous border, that it heals before the patient has occasion to consult a physician.

The primary sore in the rectum differs in no wise from that seen elsewhere, except at the verge of the anus between the mucous folds, when it may assume the form of fissure in ano. Care should therefore be exercised in examining all cases of fissure, to see that there is no localized induration at the point of ulceration; that its borders are not elevated, and that there are no other concurrent symptoms of syphilis in the individual. Especially is this important in women as the rectum in them is so exposed to contact with the male organ. The existence of pain in these fissure-like ulcers is no proof that they are not syphilitic, for if they involve the muco-cutaneous border they are almost as painful as any other form of fissure.

The primary lesion in the rectum has been so rarely recognized that many eminent syphilographers have denied its existence *in toto*. Those who have read the reports of Fournier, Martineau and Hartley certainly can not doubt its existence, and I do not care to enter into any further statistics to prove it. They may occur as abrasions, erosions, round, crater-like ulcers, brown papules, or, as said before, as fissures between the mucous folds. All these manifestations are distinguished from similar non-specific lesions by a history of exposure, and by their localized cellular induration and infiltration. They do not involve the deeper layers of the gut; they heal in about three weeks or less, leaving a slight induration, rarely a cicatrix and no stricture. They will be rarely seen and more rarely diagnosed, but as we do not any longer treat syphilis at its initial stage unless some constitutional manifestation is apparent, little harm will be done by our failure to recognize these early signs.

Between the secondary and tertiary syphilitic ulcerations of the rectum, it is almost impossible to draw the line, unless we make it in weeks or months. Ulcers of secondary appearance may come on years after infection, just as a secondary skin eruption may recur after five or ten years in a properly treated case of syphilis. I prefer, therefore, to confine the term tertiary to ulcerating gummata and call all others secondary or secundo-tertiary. The time at which these ulcers occur varies from the third week after infection to the most remote period of life and their characteristics do not differ much whether occurring early or late, with the exception that the later in the disease the more likely are the ulcers to involve the deeper layers of the rectal wall. They are of variable shape, generally oval, but running up and down the rectum instead of around the gut as is the case in tubercular ulcers. They are crenated, crater-shaped, with sharply cut, infiltrated edges, never undermined, with grayish, sluggish-looking bases and bleed easily upon touch or friction. This condition of the edges, this color of the bases, this hemorrhagic tendency, positively diagnose these ulcers from tubercular ulcers which have a light yellowish look, are nearly always undermined, and ragged at the edges, discharge a thick muco-pus and rarely bleed. The early secondary syphilitic ulcers do not as a rule involve the muscular layers of the rectal wall, but if superficial and if treated at this stage they disappear, leaving behind no cicatrix or contraction. They soon become chronic, however, and invade the deeper tissues, one after the other, until they lay bare the sacrum, perforate the vaginal wall, or even the peritoneum itself. The ulcers have a tendency to extend up the bowel, instead of around it, although they do sometimes take the latter course, and as they advance from point to point the older portions heal and leave behind a smooth, white, depressed cicatrix, with slightly pigmented borders, the essential characteristic of which is to persistly contract. The bases of these ulcers are at first soft and edematous, but as they become more chronic and progress, cellular infiltration takes place in the submucous and mus-

cular coats. The walls of the rectum assume a stiff and leathery feeling, and narrowing of the canal begins. The muscular fibers degenerate into fibrous tissue and there is left a contracting, connective or cicatricial tissue, the prominent feature of which is to hypertrophy and contract, and this is the condition which produces incurable stricture of the rectum. During this formative stage, we may have almost an occlusion of the gut, by a tissue differing much from the dense and cicatricial tissue which is the last stage of syphilitic stricture. In this condition there is a localized, cellular infiltration, which is not dense and hard, but soft and easily torn and composed of new, embryonic cells as will be seen from the following pathologic examination given by Mallassez (Dict. Encyc. page 728). "At the level of the contracted portion, at the point most elevated and least permeable, which offers to the introduction of the finger and the passage of matter a great resistance, were found, not as is ordinarily taught, a tissue analogous to cicatricial, but a tissue analogous to 'bourgeons charnus'—proud flesh. This tissue, formed of new elements, is very vascular and offered little resistance to instruments when one sought to dilate it; it was only lower down in the widest part of the stricture that there were seen fascicles of hard, connective tissue surrounded by embryonic tissue and presenting the characteristics of cicatricial tissue. Between the fascicles of the muscular tissue were found also a large number of embryonic infiltrated elements, which reunited themselves at certain points. . . . . Finally, in the part which was below the stricture and which corresponds to the sphincterian regions, one observed almost always the cicatrices of the old ulcerations." From which it appears that the hard connective or cicatricial tissue stricture is the result of preceding ulcerative processes.

In women, recto-vaginal fistulæ are more likely to be found before the permanent cicatricial stricture is formed, and in my experience they are invariably below the contracted point. Especially is this the case if there be anterior rectocele, because the hardened masses of feces and the irritating discharges lodging in this pocket, the walls of which are already thin and inflamed, cause sloughing and breaking through into the genital tract. These fistulæ are not due to straining in order to pass the contents of the bowel through a strictured channel, but are purely the result of ulcerative processes. Curling (Diseases of the Rectum, page 112) and Paget (*Medical Times and Gazette*, 1865, page 279), seem to take the view that these ulcers are extensions from condylomatous developments about the anus. I have never seen a case which would confirm this view. Indeed I believe that condylomata are secondary to the ulcerations, and due to the irritating discharges from them, together with lack of cleanliness about the parts. The ulcers nearly always begin above the external sphincter, and there is a border of healthy, mucous membrane between them and the cutaneous border. They may be multiple, and extend throughout the entire extent of the large intestine but as a rule they decrease in size and frequency as we ascend the colon.

The first stages of stricture consist of ulceration, followed by a cellular deposit of soft embryonic tissue in the sub-mucous and muscular walls of the gut. This tissue becomes organized into connective tissue, hardens, contracts, and the surfaces heal over leaving a shining, bluish-white cicatricial appearance. In their early stages these strictures are soft and dilatable, but after the cicatrization has taken place the muscular tissues become infiltrated and atrophied or degenerated, and dilatation is no longer practicable. The early recognition of the ulceration, and the prevention of these later sequences should therefore be the aim of syphilographers and rectal surgeons. When the permanent stricture has once formed, the condition is more in the domain of the general surgeon than of the syphilographer. Prevention of stricture is our province—not its cure.

Prevention may be accomplished to some extent, in the following ways: 1, by systematic subjective and objective examination of every syphilitic patient with regard to the involvement of his or her rectum. The patient should be warned what to look for and at what period he should expect these manifestations. The use of the speculum, where the finger is not educated or where one feels any suspicious condition is of the utmost value. 2, by examining every case with rectal ulceration with reference to specific taint. Within the past year I have had sent to me as cases of cancer, three undoubted cases of syphilis of the rectum. Two of them, fortunately, had not reached the cicatricial stage of stricture and are now comparatively well. 3, we should be careful and accurate in our diagnosis between simple traumatic, tubercular and syphilitic ulcerations of the rectum. The history of the case may, or may not be of value. Many cases of syphilitic ulceration of the rectum are cases of "syphilis innocentium" and unwittingly deceive us in our subjective examinations.

The presence of pain is no proof that an ulcer is not syphilitic. It is the location of the ulcer of the rectum which governs the pain rather than its nature. A syphilitic ulceration upon the muco-cutaneous border is just as painful as any form of ulcer, and a traumatic ulceration of the rectum above the external sphincter is just as free from pain as a syphilitic ulcer. The history of constipation, the use of enemata or other instrumental or digital manipulation of the rectum would suggest a traumatic nature for the ulceration. Yet these conditions existing and producing the ulcer, if there be constitutional syphilitic taint, the ulcer, originally simple, may take on a syphilitic nature and progress as other syphilitic ulcerations. Ulceration of the rectum from cirrhosis of the liver or kidneys is of a shallow character, associated with profound constitutional disturbances, it involves the mucous membrane, generally, of the entire rectal cavity, and occurs in the later stages of these diseases. It is not likely to be confounded with specific ulcerations. Chronic, advancing ulceration of the rectum, with cicatrizing border at its earlier points, is almost invariably syphilitic. Dry, brittle, mucous membrane about the anus, which cracks open by slight distention or upon the introduction of the finger, or pale pink, crenated, hypertrophied folds of the lower border of the mucous membrane are very likely to be associated with constitutional syphilis and frequently with ulceration higher up.

Nevertheless, these conditions are not positive proof, as the French and some English surgeons claim, of syphilis. The ulcers of the rectum which are likely to be confounded are the tubercular and syphilitic. The distinguishing points between these two varieties may be stated as follows:

Tubercular Ulcer.—Hereditary predisposition; general constitutional appearance; other organs may or may not be involved; base yellow; edges undermined, not indurated; ulcers if multiple, do not generally coalesce but are united by submucous fistulæ; do not advance upon the surface, but burrow and form pus cavities and fistulæ; pus thick, stringy, scanty; rarely bleed; the deeper tissues seldom involved; no tendency to heal as they advance from point to point; no infiltration or atrophy of muscular wall; little if any tendency to contract or produce stricture.

The crucial test is the finding of tubercle bacillus; but failure to find it is only negative eidence and of little value.

Syphilitic Ulcer.—Hereditary or acquired history; ulcers generally single; bases gray; edges indurated, sharp cut and not undermined; if multiple, ulcers unite by coalescence; pus very serous and always bloody; deeper tissues always involved when ulcer has existed for any length of time; progress rapidly, and generally up the gut, instead of circularly; tendency to heal as they advance and leave contracting cicatrices; muscular and submucous walls of gut infiltrated, stiff and leathery; constant tendency to contract.

The therapeutic test is of little value in the diagnosis of rectal ulceration as the most thorough anti-syphilitic treatment will generally fail to cure an ulceration of the rectum unless associated with proper local measures. There is one form of local tubercular ulceration which is very difficult to distinguish from ulcerating gummata. These both begin in globular, elastic, sub-mucous swellings. In their early stages they are not attached to either the mucous membrane or muscular wall of the gut. They may be single or multiple; of small or large proportions. The gummata are harder, less elastic and more likely to be multiple than the localized tubercular manifestations. They are also generally associated with other tertiary syphilitic lesions elsewhere in the body. Mollière says they do not suppurate but undergo a sort of fatty or cheesy degeneration and thus break down. The localized tubercular ulcer discharges pus, its edges are undermined and there is only a slight inflammatory zone about them. They are acute and yield readily to local treatment. The gummatous ulcer, on the contrary, discharges little pus, it is chronic, is surrounded by an inflammatory zone and does not yield to local treatment unless associated with constitutional therapeusis. It remains chronic, eventually involves the deeper walls of the gut, and may be the commencing point of syphilitic stricture of the rectum, but the ulceration remains still the essential factor in the production of the fibrous, cicatricial condition.

TREATMENT.

The constitutional treatment of these conditions does not differ from that of syphilis elsewhere. Mercury, however, should not be given internally in these conditions as it is necessary to give the parts as much physiologic rest as possible. It should be used by hypodermic injections, inunctions or sublimations. The iodids should be administered in the form the least irritable to the stomach. I have recently given it in a solution of pepsin and this solution administered in milk. Another plan which has been suggested to me by Dr. Dillon Brown of New York, consists in dissolving the iodid in milk, and making of this a rennet whey, the fluid part of which retains the iodid and this is administered to the patient. It is a most unirritating solution and seems to agree with the most delicate stomachs.

For local treatment, except in the gummatous form of ulceration, I do not believe in irritating or cauterizing agents. Soothing and protective remedies have yielded the best results in my hands. Irrigation with boric acid or pyoktanin solutions, the application of slightly stimulating remedies, such as weak solutions of nitrate of silver, sulphate of copper, carbolic acid or bichlorid of mercury, and the insufflation of iodoform, or better still, aristol, upon the ulcerated points will generally cause them to heal and relieve the uncomfortable sensations of the patient. Recently I have obtained a very rapid healing in one case from the local application of a 10 per cent. solution of alumnol. Where this course of procedure does not result in cure we have one recourse, and that is absolute physiologic rest to the parts. This is given by inguinal colotomy; the formation of an artificial anus through which all the fecal matter shall pass and the continuation of our local treatment. If the ulceration heals following this procedure, and does not leave a dense, fibrous condition of the rectal wall, the artificial anus may be closed and the passage of the feces restored to their normal channel. If there is a dense, cicatricial condition of the rectum left, then it would be wiser either to close the rectum permanently and let the patient bear the artificial anus through life, or to resect the strictured portion of the rectum and bring the healthy portion of the gut down and attach it to the anus or that portion of the rectum which is not involved, above this orifice. In the localized gummatous form of rectal ulcers, scraping out of the diseased tisse with a sharp spoon and then treating it as a simple ulcer, together with constitutional anti-syphilitic treatment will generally result in a cure. These methods applied with the early recognition of the disease will save us the mortification of seeing so many incurable strictures of the rectum and will avert a world of suffering to those who seek our aid, but beyond and above all methods of treatment is the importance of early recognition in these cases.

35 West 45th Street, New York.

PSEUDO-CHANCRE.

Read in the Section on Dermatology and Syphilography, at the Forty-sixth Annual Meeting of the American Medical Association, held at Baltimore, Md., May 7-10, 1895.

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Few syphilographers doubt the existence of syphilitic reinfection, but most of them regard it as an occurrence of extreme rarity. The literature teems with recorded cases; but an exact analysis shows that the vast majority of them is open to grave doubt. They are either cases of manifestly incorrect diagnosis, or they are cases so imperfectly recorded that they lose all value as evidence in this much disputed subject.

Until the middle of this century the law of Ricord obtained universal acceptance. Syphilitic immunity, once established, was supposed to last during the remaining life of the patient. And the exceptions that were noted were so infrequent and so insufficiently proven that they detracted nothing from the validity of the general proposition. Petit, Fournier, and the entire Parisian school accepted it absolutely.

In the year 1858, however, renewed attention to these exceptions was called by Zeisse.[1] He showed conclusively that in certain cases re-infection did oc-

[1] Lehrbuch der Syphilis, 2d ed., 1872, p. 58.

cur, and that absolute immunity after one attack was not the invariable rule in syphilis any more than it was in the infective diseases of acuter course and similar nature, such as variola, morbilli, etc. He was soon followed by others who collected series of cases of alleged re-infection. Gascoyne[2] had twelve cases; Caspary[3] three, and Diday[4] twenty-five. In more recent times Scarenzio,[5] Morel Lavalee,[6] E. Feibes,[7] Glascow Patteson,[8] Salsotto,[9] Koebner,[10] Pauly,[11] Pospelow,[12] Diday and Doyen,[13] Eichorst,[14] Lang.[15] Peters,[16] Swinburne,[17] Fisichella,[18] have all reported similar cases.

When we examine these cases critically we notice especially the paucity and incompleteness of the history of the so-called second attack of the disease. As a rule the sclerosis is the only symptom that is noted; the other manifestations of secondary disease being so mild and uncharacteristic, when present at all, that we may well be left in doubt as to the true nature of the so-called chancre.

Sigmund long ago pointed out[19] that there occurred tertiary ulcerations that possessed all the characteristics of the true sclerosis; and Fournier[20] classified several lesions which simulate the initial chancre. Brègeal[21] called attention to gumma of the penis; the frequency of its occurrence rendering it extremely liable to be mistaken for a primary lesion. Von During[22] has observed pseudo-chancres in which an apparently characteristic induration lasted for from five to six weeks, and which were never followed by secondary symptoms. Keyes[23] believes that in most of the recorded cases of a second attack of syphilis a pseudo-chancre was mistaken for a true sclerosis, and Taylor, at a recent meeting of the New York Dermatological Society, expressed a similar opinion.

Finally, the doubt as to the real existence of a re-infectio syphilitica has gone so far that Hudelo,[24] making an examination of 148 recorded cases, hardly admits the validity of nine of them. Nevertheless, there are a few undoubted cases. Some of those recorded by the authors mentioned above seem to be beyond suspicion, and Hutchinson's case, which occurred in a physician, can not be doubted—more especially as the patient had had variola twice.

The following lesions may simulate a true chancre:

1. *An Artificial Induration.*—Such as may be produced on a herpetic or chancroidal ulceration by the use of nitrate of silver, carbolic, nitric or acetic acids, the acid nitrate of mercury, or even alcohol. This is undoubtedly a frequent source or error, and it requires the strongest corroborative evidence in the shape of other early syphilitic lesions to diagnose as a chancre any ulceration that has been treated in such a way

2. *A Nodular Lymphangitis in Gonorrhea.*—If phymosis is also present the nodule can be felt but not seen, and until the glans can be exposed again we must remain in the dark. Even if there is no phymosis the nodule may be exulcerated, and we must suspend judgment.

3. *Scabies.*—Here lesions on the penis are the rule, and form one of the diagnostic points of the disease. If now such a lesion has been scratched or irritated in any way it is quite liable to be mistaken for an initial lesion.

4. *A Secondary Induration*, occurring late in the disease at the site of the initial lesion. This is the pseudo-chancre of Fournier, and whilst it is of rare occurrence, it exactly simulates the original tumor.

5. *A Papule or Tubercle* situated on the penis as part of a more or less general specific eruption. This has to a certain degree the same characters as the chancre, being a small-celled accumulation of similar morphologic characters.

6. *An Ulcerating Gumma.*—This is especially likely to deceive when situated on the corona, where induration is with difficulty determined. Of not infrequent appearance in late syphilis, its beginning as a submucous induration, and its hard base and border when ulcerated, cause it to simulate an initial lesion very exactly.

7. *An Epithelioma.*—In certain cases the exulcerated tumor with glandular involvement may render the diagnosis difficult. All of these pseudo-chancres are fertile sources of error in diagnosis. All of them may look so like a true chancre as to deceive even an expert. Some necessarily occur in patients already syphilitic; in others the patient may or may not have had the disease.

The two cases of which I present you models and a photograph to-day are cases in point. Both were regarded as initial lesions by competent judges; the first one might have been recorded as a case of true sclerosis without true subsequent systemic infection, whilst the second was apparently a case of true re-infectio syphilitica.

Case 1.—Rudolph H., German, 44 years old, of robust physique and healthy color, came to me at the beginning of September, 1893, to consult me concerning an ulceration on the frenum and the under surface of the sheath of his penis.

His history was as follows: He was a married man with a perfectly healthy wife, and he had not been delving in extra-marital fields. This usually valueless statement acquired some little importance when I got to know him intimately, as I did later on, and to appreciate the happiness of his home life and his character for veracity. He was quite at a loss to account for his sore, unless it had been acquired in a manner which I personally believe does sometimes occur, in spite of the ridicule that is heaped upon it. The son of the man in whose office he was employed was suffering from an enormous sclerosis of the under surface of the glans, which subsequently became phagadenic; he was under my care at the time, and developed later on so bad a general papulo-squamous syphiloderm that I sent him to Aix-la-Chapelle to get him out of the way of his friends. This boy was in the habit of dressing his sore whilst sitting on the only water-closet belonging to the office, and spending a considerable portion of the day at that agreeable occupation. All the employés of the office knew exactly what was the matter with him, and they were loud in their complaints at the dangers they supposed they were compelled to run. H. did not contend that this was the source of his infection, but he knew no other way to account for it and his sore was exactly on the spot where one would expect it to be had an accidental inoculation occurred in the manner indicated.

He first noted a little lump in the frenum at about the end of July; it gave him no trouble at first, but grew rather rapidly and soon began to ulcerate. The physician whom he consulted diagnosed a syphilitic chancre and treated it with vaseline for a week. It grew steadily worse, however, spreading in size and

[2] Medical Times and Gazette, Dec. 5, 1874.
[3] Vierteljahresschr. f. Derm. u. Syph., I. 1876.
[4] Archiv Gen. de Med., July and August, 1888.
[5] Monatshefte f. prakt. Derm. 1888, p. 289.
[6] Obid., 1890, p. 32.
[7] Berl. Klin. Wochenschrift, 1891, p. 988.
[8] Brit. Journal of Derm., 1891, p. 286.
[9] Gaz. Med. di Torino, 1892, No. 48.
[10] Berl. Klin. Wochenschrift, 1892, No. 46, p. 549.
[11] Annales de Derm. et de Syphil., 1892, p. 690.
[12] Obid., p. 125.
[13] Obid., 1893, p. 354.
[14] Muench. Med. Wochenschrift, 1894, No. 16.
[15] Annales de Derm. et de Syph., 1893, p. 1219.
[16] Annales de Derm. et de Syph. 1893, p. 296.
[17] Obid., p. 1095.
[18] Obid., 1894, p. 628.
[19] Pitha and Billroth's Handbook.
[20] Erreurs de Surprise, etc., Journal of Cut. and Genito-Urinary Diseases, 1895.
[21] These de Paris, 1886; Monatshefte f. Prakt. Dermat., 1887, p. 999.
[22] Monatshefte f. Prakt. Dermat., 1889, p. 492.
[23] Venereal Diseases, 1880.
[24] Annales de Derm. et de Syph., 1891.

increasing in hardness; the ulceration became deeper and the discharge more profuse. Bubo was not present, nor was there any pain. His physician then changed his diagnosis to that of chancroid and used the nitrate of silver stick, followed by powdered boric acid. This cauterization was repeated twice in the next four or five weeks, but the sore continually increased in size. The patient then consulted a specialist in a neighboring city, who also declared the ulceration non-specific, and touched it up with nitric acid, dressing it afterwards with aristol. Nevertheless there was no improvement; the ulceration progressed.

On Sept. 11, 1893, I saw him for the first time. The penis was edematous to a considerable degree and situated at the frenum and on the sheath just below it was a large irregular ulceration. It was oval in shape, with its long diameter transverse to the shaft of the penis; it was fully one and a half inches broad and one inch in length. The cast that I show you was made some time later, when the healing process was already well advanced; it is less in size than when I first saw it, but it shows the characters of the ulceration with fidelity. From the main lesion a thin line of ulceration extended up along the frenum onto the under surface of the glans; and here was situated a second smaller ulceration similar in character to that below.

The base of the ulcer was clean and fairly well covered with granulations. The margins were sloping and not undermined. Most characteristic, however, and most striking, was the induration. It was very marked, brawny to the touch and sharply circumscribed from the surrounding tissue. On the glans it was, of course, not so marked, but still perfectly evident. The entire mass was apparently a well defined tumor with superficial exulceration. It was a typical sclerosis, as far as the physical signs went.

Fig. 1.—Pseudo-chancre: herpetic or chancroidal ulceration with artificial induration. Cured by calomel locally; no internal treatment; no signs of syphilis.

The only other sign was a bilateral adenopathy. The inguinal glands in both groins were tumefied, hard and painless. Though not as stony as we frequently see them in the infecting chancre; they were not the painful, enlarged buboes of chancroid.

Other symptoms there were absolutely none—neither general adenopathy, rheumatism, defluvium capillorum or exanthem. The ulceration had been present for seven weeks.

I was naturally inclined to diagnose chancre, though I felt by no means certain that that was the case. I applied an iodoform dressing and awaited results. I kept the patient under careful observation, seeing him almost daily.

In one week's time it was very evident that the iodoform was doing the patient no good; the ulceration was extending. Calomel was then used, and with a marvelously satisfactory result. Improvement commenced at once, and though slow, was unbroken. The ulceration steadily healed, but the induration remained unaffected. By November 1, cicatrisation was complete, but a marked and apparently characteristic induration, larger than a large bean still remained. This was still present, though smaller, on Jan. 1, 1894.

Meantime I watched the patient very closely for the slightest appearance of anything that would indicate systemic infection, but without finding it. The examinations were frequent and not perfunctory. The entire integument and all the cavities of the body were closely scrutinized. At the present writing, nearly two years after the first appearance of the sore, I am able to say that there has never been the slightest sympton of secondary syphilis.

Unless we are willing to admit that a chancre accompanied by inguinal adenopathy may be the only result of infection with the specific virus, we must regard the lesion in R. H.'s case as a false or pseudo-chancre belonging to the first class of artificial indurations. And this in spite of the very clear history of its beginning as a subcutaneous nodule given by the very intelligent patient, and in spite of the hardness, painlessness, absence of chancroidal bubo and cure by calomel powderings. Whether it was originally a herpes or a chancroid it is impossible to say, but it falls within the category of those cases that I have ventured to call pseudo-chancres.

Fig. 2.—Pseudo-chancre. Indurated exulcerated lesion simulating chancre. Complete history of syphilis three years before. Ulceration one month old; spreading. No other evidences of recent syphilis. Rapid cure under KI internally. G. W. S. D., March, 1895.

Case 2.—F. M., 41 years old, a tall and thin but otherwise fairly healthy looking man, consulted me on March 20 of this year for an ulceration on the under surface of his penis. Though only a mechanic, he is a fairly well-educated German, and he gives a very clear and precise history of his case as follows: Three years ago he had a chancre which was soft at first, but subsequently became quite hard. It appeared exactly four weeks after intercourse, and the scar that it left on the glans penis is still visible. It was a lump as big as a bean or larger, and was treated by the physician to whom he went with gray ointment. After a time it ulcerated, but the hardness lasted fully two months after the ulceration had healed. A few weeks after the appearance of the tumor an eruption of pimples appeared all over his body, for which the doctor gave him drops. He had also persistent headaches, a bad sore throat and falling of the hair. In fact, he gives a circumstantial and complete account of syphilitic infection at the date mentioned. Since that time he has had occasional eruptions of pimples on the body, but he got tired of taking medicine and has had none at

all for two years past. The spots always went away of themselves in time.

He complains now of a sore that appeared on his penis some four weeks ago and which he calls a chancre. Examination shows the presence of a kidney-shaped ulceration situated on the under surface of the penile sheath near the preputial orifice. Its concavity is toward the meatus, and it measures one and three-quarters by one inch. Its margins are extremely distinct, raised and rounded; its edges are sloping; its base is covered with granulations intermixed with a small amount of necrotic tissue. The tissue immediately around and under the ulcer is distinctly indurated, and whilst not very hard, it is sharply limited, and can be readily differentiated from the soft tissue of the sheath. The ulcer has been gradually increasing in size since it began, but there has been no pain nor has it inconvenienced him in any way. There has been no treatment.

Examination of the patient's body revealed the following facts: There is a slight inguinal and cervical adenopathy, otherwise the glandular system seems normal. On the glans penis is a distinct scar, which the patient says is the mark left by the initial lesion of three years ago. At three or four places on the trunk and limbs are groups of characteristic large papular lesions which tend to spread peripherally. They have been present for several weeks, and the largest and oldest are covered with a crust, the removal of which reveals central breaking down. On the anterior surface of the left wrist is a distinct gumma, one inch in diameter. It was opened some five weeks ago by a surgeon under the impression that it was an abscess. Besides this there are on various places over the body groups of small circular cicatrices. Some, the more recent, are still pigmented, others are white and atrophic.

Treatment revealed the correctness of the diagnosis; recovery complete and rapid under iodid of potassium.

The patient then has a florid syphilis in its tertiary stage, as is evident by the unsymmetrical papular eruption and the gummata. He has a gumma of the penis, which presents enough of the characters of an initial lesion to be mistaken for one, especially on a hasty or superficial examination. He had what I may venture to call a typical pseudo-chancre, inasmuch as it looks and feels like one.

There is, so far as I am aware, no characteristic and no combination of signs that will enable us to diagnose a chancre. Only the advent of other symptoms in their proper order gives us data to form an opinion as to the existence of systemic infection or not. And we must look with grave doubt on all reported cases of syphilis with indefinite and badly marked secondary symptoms, such as almost all the cases of reinfectio syphilitica are.

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SOME REMARKS ABOUT ASEPSIS IN MILITARY SERVICE.

Read at the Meeting of the National Association of Military Surgeons, Buffalo, May, 1895.

BY LIEUT.-COL. EDWARD BOECKMANN.
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(*Concluded from page 172.*)

Very recently something has been written about catgut, which can be boiled after treatment with formalin, a 40 per cent. solution of formol (formaldehyd), a tanning agent of pronounced antiseptic properties. Thereby nothing is accomplished. Formalin evaporates during the boiling; the catgut, which formalin has converted into a sort of absorbable wormgut, is sterilized like the last only on the surface. Those microörganisms, not destroyed during the hardening with formalin, whose germicidal power in a given time is very feeble, are liberated, as the catgut is absorbed, from the interior which is not affected by the boiling water. Consequently I do not hope much for formalized catgut which can be boiled. Tanned catgut, either formalized or chromicized, has, however, an apparent advantage in being absorbed slowly; I, for my part, do not see any reason for using any but the fat-containing, sterile catgut, which resists absorption sufficiently long. In order to preserve catgut as a skin-suture to the exclusion of all others, it will be neccessary, so far as I am able to judge, to continue along the line indicated in retaining the fat and to seek an agent, which will render catgut an impossible culture medium and remain with it, until the last fiber is absorbed. Lanolinized catgut seems to be a step in advance, but the last word has not yet been said, for which reason I would provisionally recommend my catgut to you as a specially adapted all-around suturing and ligating material in military service.

Boiling water is an excellent germicide and is excelled only by the free flame, which however has but little practical application. Boiling water kills all surgical bacteria, spore-bearing or not, in the course of a minute or two. The pyogenic bacteria according to Sternberg's world-famed tables are destroyed in 10 minutes by moist heat at about 150 degrees F., which corresponds to boiling for as many seconds. Moist heat is consequently disproportionately much more powerful than dry heat; the reason why is not definitely settled. It is probably a purely mechanical boiling to pieces of the capsule of the bacteria. Boiling is such a safe, quick, easy, economical and non-injurious method of sterilization that it can not be too strongly advocated, wherever it is practicable. Boiling is and will be our favorite method for the instruments. By making the water alkaline with soda or still better with green soap its sterilizing power is increased, as the instruments are at the same time cleaned and the temperature somewhat increased; twisting is prevented and the cutting-edge of sharp instruments not markedly affected. The instruments must not be placed in the water before the latter boils, and it can not be too strongly emphasized, that they should always be kept in first-class condition at all times. I know of no practical method of preserving instruments sterile and ready for use; if they are boiled and thoroughly cleaned after each operation, it is only necessary to place them in a tray and cover them with boiling water at the next operation and they are perfectly safe after a few minutes standing.

Although the boiling of instruments can take place in any vessel whatever, it is desirable, especially on the field, to be supplied with a specially constructed instrument-boiler. Such a one is depicted below. It is constructed on the principle of the steam sterilizer, illustrated further on, and consists of three separate parts: the boiler, instrument-tray and the cover. The boiler is filled with sufficient water to cover instruments; some soda, green soap or even lysol is added. The cover, formed like a pan and fitting inside the boiler is adjusted as shown in the illustration. The apparatus is placed on the fire, while the instruments are arranged in the wire-tray. When the water boils, visible at the border of the boiler, the latter is uncovered to receive the instruments. The central tube, which in no way interferes with the instruments, prevents the water from boiling over, by conducting off the formed steam, which disappears invisibly under the bottom by passing over a hot plate, not shown in the drawing; the plate protects the flame from extinction by the steam. Five minutes boiling is all that is needed; the boiler is removed from the fire and placed on a stand convenient for the operation. The cover which has been

sterilized simultaneously, is lifted out and turned over; the instrument tray is deposited within the cover. The boiled water serves many purposes during the operation. I cherish the hope, that this compact, transportable instrument-boiler is eminently adapted for operations in the field.

Steam, water in gaseous state, follows closely boiling water in germicidal power, when it has its temperature, when it is unmixed with air (saturated), when it penetrates the articles to be sterilized and when it condenses its moisture in every single particle thereof. If these precautions be observed, the articles concerned will be literally boiled in steam, resembling what occurs in boiling with water. Steam can consequently not cleanse everything; articles to be sterilized by steam must therefore be washed beforehand, if they are not clean. Steam is more particularly adapted to porous materials; solids are disinfected by steam solely on their surfaces; fluids are not sterilized by the steam itself, but by the heat communicated by the latter. In order to sterilize water, watery solutions or emulsions, like milk for instance, it is therefore perfectly indifferent, whether the containing vessel is placed in steam, boiling water or hot air. Concerning sterilization of fatty substances it must be remembered, that they can not derive the benefit of moist heat at all, because they either do not contain water or, like lanolin, contain it in such a manner, that it becomes separated. Consequently the sterilization of fatty matters by the aid of steam means a dry heat sterilization, ineffectual because of the low temperature.

Concerning the temperature of the steam, boiling water will at the ordinary pressure of the atmosphere at the sea-level give off steam at 212 degrees F.; this is *low* steam. The higher the altitude, the less consequently the pressure and the lower the temperature of the boiling water and its steam. This should be borne in mind when sterilizing with steam or boiling water at high altitudes. Steam of higher temperature than 212 degrees F. is obtained by conducting it through heated pipes or into heated chambers—*superheated* steam, or by evolving it under pressure, *high* steam. All pathogenic bacteria, we know, sporebearing or not, are destroyed in steam at 212 degrees F. in the course of five minutes, low steam is therefore as regards temperature surgically perfect. Superheated steam resembles hot air in germicidal power; its temperature must consequently be raised considerably and it must be continued for hours in order to destroy spores. High steam on the contrary is more powerful than low steam. High steam at 221 degrees F. will, in the course of ten minutes, kill all kinds of spores—pathogenic or not. No spores are capable of germinating when a high steam temperature of 230 degrees F. is reached. The high steam is not only surgically, but also bacteriologically perfect. Where the temperature at high altitudes is below 212 degrees F., the sterilization must be continued beyond the above mentioned five minutes, what we usually also do at lower lying situations, where we "for safety sake" let the steam play for half an hour or more.

Concerning the penetration of the steam, we all know by experience, how much more easily steam penetrates than hot air. It is in addition a matter of fact that steam, which streams from above downward, penetrates to perfection every single particle of the porous materials in its path, because it, on account of its lower specific gravity than air, travels in a vertical column to a horizontal plain, while steam, which streams from below upward, its natural course, preferably seeks an outlet along the line of least resistance with unequal distribution and uncertain penetration of the articles as a result. Streaming over-steam, which we might designate the steam from above downward, is consequently the proper steam, while streaming under-steam, which travels in the opposite direction, is absolutely to be discarded in great as in small, when dealing with surgical steam sterilization of materials which are to be penetrated all through, unless these are uniformly packed—an unattainable requirement in practical life, where the sterilizing chamber is filled with articles of most different size, form and density as bandages, towels, sheets, cotton, etc., and which leave open spaces between them. Steam at rest also penetrates well, particularly when it is high, though not as expeditiously and thoroughly as the incessantly streaming one.

Concerning the condensation of the steam, it is of considerable importance that the materials to the greatest possible extent get the benefit of the contained moisture of the steam; the more moist the steam operates, the more it imitates boiling and the better it sterilizes. Condensation of the moisture is absolutely necessary and will take place when the articles are of lower temperature than the penetrating steam; the greater the difference, the greater is the condensation and the more wet the articles. For this purpose the quantity of water delivering the steam cuts an important figure. The greater the quantity of water boiled the greater is the amount of steam and the more abundant the condensation. Therefore the steam sterilizers should be constructed to hold a quantity of water proportional to the amount of articles and the size of the apparatus—half a gallon being appropriate for small sizes and one gallon for larger. For the same purpose we must provide for good fire—good, preferably double, non-sooting gas burners, powerful gasoline stoves or good kitchen fire; while alcohol or kerosene lamps are less suitable for larger sterilizers, they can be used with advantage for the small ones, for instance, milk sterilizers. Under abundant generation of steam the time of sterilization is shortened, the generation and condensation following rapidly, and outweighs the additional time required in heating up a larger amount of water. The highest degree of condensation is attained by conducting abundantly generated steam through coldest possible materials. It takes the steam, of course, longer time to penetrate a cold than a warm article, as the first condenses more steam than the last and at a lower temperature, and as this condensed moisture must again be vaporized by the incoming stream to advance further. In order to abbreviate the time it was formerly recommended to construct the steam sterilizer in such a manner that the contained articles could be heated up by dry heat before the steam was turned on; this would consequently highly facilitate the penetration by re-

ducing the condensation and time is apparently saved. Yet this heating up beforehand is largely a thing of the past; the time gained is lost in heating up the articles and, this is most weighty, we lose to a great extent the all-important advantages of an abundant condensation. It is a remarkable and at the same time welcome circumstance that the temperature during the condensation and the following evaporization of the condensed moisture increases beyond the original temperature of the steam and it rises higher the larger and more packed the apparatus is—up to 219° F. and even more. The reason of this can provisionally be indifferent; it is enough for our purpose to point out this happy occurrence. This increased temperature lasts about a quarter of an hour; when the condensation is complete, the condensed moisture again vaporized and the steam flows unburdened and free, the temperature drops to the normal. During the condensation and vaporization with their increased temperature the determining and essential sterilization takes place; later on the steam works with little or no moisture and therefore with little efficacy, if with any at all. At any rate the first fifteen minutes are more important than the same number of hours afterwards.

Concerning finally the saturation of steam or freedom from admixture of air, all agree that it is of much importance to have all air contained in the sterilizing chamber completely expelled, as heated air has a considerably less sterilizing power than steam. It looks very peculiar, that modern German and American authors, who in their books take special pains to emphasize this point, without hesitation construct, picture and recommend apparatus which in no way comply with the laws they themselves have subscribed to. It is an easy matter to expel the air completely from an apparatus constructed for streaming steam. The steam itself will effect this, provided it enters above and leaves below, since it, as above stated, is lighter than the air, remains on top of this and drives it out with a piston's action. If the steams enters below it will hurry upward through the contained air and leave above. It will certainly carry with it a good deal of air, but never completely, as the air is too heavy for it and it has not the power, abundance or uniformity. Under such circumstances it is no criterion, that every part of the sterilizing chamber shows an uniform temperature of 212 degrees F., as the retained air will be heated to the temperature of the steam. We have then in the same apparatus air at 212 degrees F. and steam at 212 degrees F. and this justifies me with great positiveness to insist that surgical steam sterilizers for under-steam are scientifically wrong and practically useless, at any rate, unreliable. We must vigorously demand that apparatus for streaming steam must be constructed for over-steam, whether they are large or small, stationary or portable. In apparatus for steam at rest the air must be expelled. This is attempted by a stop-cock on top, opened three or four times as the chamber becomes filled with high steam. The steam mass is then so considerable, powerful and compact that we reasonably expect to expel the air almost to completion, but not with positive certainty as is the case with over-steam.

After the above laid down principles for disinfection with steam we arrive at the result, that low, streaming, wet, saturated over-steam is surgically perfect and that high, stationary, wet, saturated steam is not only surgically but also bacteriologically perfect. On either of these principles our surgical sterilizers must be constructed. The crucial question is, on what principle the most practical apparatus can be built? It is not very difficult to answer this question, when we consider that a sterilizer shall not only sterilize but that it shall also deliver the sterilized articles perfectly dry. French authors, who are so clever as to accuse German surgeons of relying upon inferior apparatus because they have adopted Lautenschläger's surgical sterilizer, while the Frenchmen employ Chamberland's bacteriologic autoclave, and forget that their sterilizers do not deliver dry materials and that their results do not outshine those of the Germans.

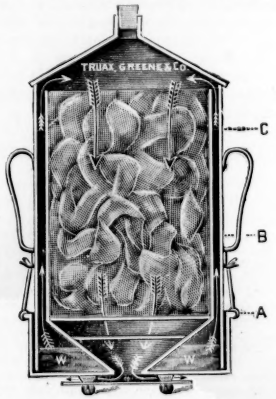
Chamberland's autoclave for high steam is viewed as a steam sterilizer, an ideal; viewed from a standpoint of a surgeon, it is far from it. It must be compactly built to withstand the high pressure; this makes the apparatus expensive and unfit for transport. It is impossible on the field. The autoclave is relegated to a stationary apparatus. Provisions necessary to measure the pressure and temperature, to make it tight and allow the escape of air and steam, complicate the otherwise simple construction and increase the expense. And, last but not least, when the sterilization is completed after one-half to one hour, according to the size of the apparatus, and the sterilized articles are removed they are moist and must undergo an extra process to become dry and fit for use. Even if the autoclave, which in my opinion belongs in the laboratory only, can be adopted and recognized in the larger hospitals with great means and facilities at their command it will be because of the above stated reasons, and can never be fitted for smaller hospitals, for individual surgeons and for the field.

Let us now, on the other hand, see how we can meet the designated requirements as regards sterilization, drying, transportation and economy in apparatus, constructed for over-steam. In the following illustration is pictured an apparatus which has cost me much money and much valuable time to bring to that perfection and simplicity I claim to be its principal virtues.

My sterilizer consists of three essential parts: A basin (A, the waterpan), an inner cylinder (B, the sterilizing chamber) and an outer cylinder (C, the hood). The basin and the inner cylinder form one piece, the outer cylinder another and these two parts are for transportation held together by means of a clasp. The bottom of the basin is perforated by a circular opening, an inch in diameter, corresponding to a similar one in the lower conical end of the inner cylinder; these two openings are seamed. The diameter of the inner cylinder is one inch less than that of the basin and the conical projection of the same begins at the level of the upper border of the basin, which is about three inches in height. At the junction of the inner cylinder and its cone is a wire diaphragm of galvanized iron. Between this and the opening below there is a square tin plate. Under the bottom of the basin is adjusted an iron plate, a quarter of an inch distant. The outer cylinder fits accurately within the basin; it is consequently nearly a half inch from the inner cylinder and it extends half an inch above the latter; it ends conically above in a short tube, fully an inch in diameter, for the

reception of a cork; it is provided with handles. The basin has a lip for filling and emptying not shown in the illustration.

Directions for use: Place the articles to be steam-sterilized in the sterilizing chamber, tightly or loosely packed as desired; adjust the hood, put in the cork, fill the water pan and place the apparatus over any good flame. When the water boils the generated steam will ascend in the narrow space between both cylinders and as the cork prevents its escape above and the water below, it must work its way through the sterilizing chamber and contained articles, leaving by the lower opening after having driven before it the air contained. Here it meets the glowing plate, which converts it into invisible, super-heated steam. That lively generation of steam occurs despite the fact that none is visible; we know it beforehand and it can be ascertained by lifting the cork. During the boiling some steam is continually condensed by the outer cylinder on its inside; the steam condensed in the conical part of the outer cylinder will not continually drop down on the contained articles because of conical form of this part, but will run back into



the basin. After completed sterilization, which requires from one-quarter to one hour, according to the size of the apparatus and the amount of packing, from the time the water boils, the steam contained in the articles must be expelled in order that it shall not moisten the contents, when these are removed and cooled. This is accomplished by removing the cork, regardless whether the flame be turned off or not, or the apparatus removed. All steam, both that given off by the water and that contained within the sterilizing chamber and its contents, will hasten to leave the apparatus through the upper opening and it will not take many minutes before the steam is nearly all gone and the articles dry. The articles nearest the diaphragm are first dried, both because the steam first leaves them and because hot air enters the sterilizing chamber from below to take the place of the departing steam. The iron plate under the bottom retains its heat for a long time and the air, which must pass over it to enter the apparatus, will be heated correspondingly. The uppermost layers of the articles will be dried last, since all the steam contained must pass through them; the close proximity to the steam generated from the water assists in keeping them slightly moist, but this can be remedied by emptying the water after completed sterilization. Larger apparatuses, which by their weight make emptying difficult, are supplied with an extra cover for the inner cylinder to protect the articles from drop. During the drying, which is accomplished whether the apparatus is over the flame or not, the temperature of the articles drops considerably below that of the steam—down to 170 degrees F. or still lower—despite that the inner cylinder is surrounded upon all sides by water and steam temperature of 212 degrees F. and despite that hot air of 400 degrees F. enters the sterilizing chamber from below this is the recompense for the increased temperature, which, as mentioned, takes place during the condensation and the vaporization.

As is made apparent the sterilizer constructed by me, originally devised for steam sterilization, is likewise an apparatus adapted not only for drying but also for sterilization by hot air, the last being mentioned under catgut. If the apparatus be placed over the flame without the cork in upper tube the generated steam will leave the apparatus through this. The inner cylinder will consequently be surrounded by water and steam at 212 degrees F., while no steam or moisture enters its lumen. At the same time a draught is brought about in the inner cylinder in the direction from below upward, as in any vertically placed pipe.

The air entering through the lower opening will consequently be heated by passing over the hot plate; the temperature of this air is about 400 degrees F. at the moment it enters the apparatus. As this temperature is scorching, the above-named tin plate is placed in its path midway between the opening and the diaphragm. This tin plate will absorb the heat and again radiate it; it acts consequently like a damper and at the same time as a radiator, with the result that the temperature at the level of the diaphragm will be about 100 degrees lower or 300 degrees F., a temperature which does not scorch, at any rate not in the time concerned. Under sterilization of catgut is mentioned how this temperature is reduced gradually as we approach the top, as the inner cylinder itself is only at 212 degrees F., the temperature of the surrounding steam, and this is refrigerating. In the upper part of the sterilizing chamber the temperature of the hot air is about 240 degrees F. The dry heat is subject to variations in the different apparatus; it is first of all dependent upon the strength of the flame, further on the thickness and size of the hot plate, upon its shape and its distance from the bottom of the basin, furthermore upon the diameter of the lower opening in the sterilizer, upon the size of the tin plate, upon the size of the apparatus itself, etc. I have originally con-

structed my sterilizer for steam and for hot air combined in order to dry steam-sterilized articles to a perfection not obtainable in any other apparatus. But when I found it was possible also to control dry heat I devoted my attention to construct a special one for sterilizing catgut also, while I have not paid any special attention in that respect to those apparatuses which are to be used for steam sterilization and drying only.

I would be pleased if I have been so fortunate as to convince you that my sterilizer is not only surgically perfect in scientific respect but that it also practically possesses material advantages. The simple construction secures a reasonable price; there are no stopcocks, regulators or safety valves; a thermometer is superfluous except for catgut; there are no solderings, which by melting when the sterilizer goes dry renders it useless; everything is seamed. It is consequently durable, especially when made of copper, and it is at the same time light and transportable. If it drops and becomes dented it is the work of a minute to straighten it out. The change from steam to dry heat is simply effected through a common cork, which is deposited in the lip of the basin when not in use. It is a matter of course that t is scientifically tested and has withstood this trial. Practically I never had any reason to suspect that it failed me. The model, which commends itself in the field, is illustrated below; it can be easily transported in a suitable wooden box.

It is deplorable that instruments can not be sterilized in steam without rusting; the steam can not, unfortunately, be rendered alkaline. Catcarth has certainly demonstrated that instruments do not rust in steam when they are previously heated to 212 degrees F. before the steam is turned on. I have tried this method extensively and can verify the truth of Catcarth's assertion, if we are very particular in heating and do not allow the instruments to be cooled off in the sterilizer after the sterilization. But I left this method as soon as I realized that boiling was so much more simple, and when I suspected that it was more than dubious that the instruments were disinfected by this procedure. If the instruments are of the temperature of the steam admitted no condensation will take place; the instruments will remain dry and consequently unaffected both by moisture and by rust despite that they are steamed. The instruments must be steamed while cold in order to be sterilized, and then they will rust. It is nowadays fashionable to construct apparatus for combined boiling of instruments and steaming of dressings. I myself have long ago cherished the same thought, but have arrived at the conclusion that instruments and dressings must be sterilized separately. It is an easy matter to construct apparatus for combined sterilization if we will employ under-steam, as Schimmelbusch and Beck have done. But I, for my part, will not agree to break with my own and at the same time universally recognized principles for the sake of such an insignificant trifle. Schimmelbusch, Beck and I have condemned the under-steam upon principle, and as far as over-steam is concerned, I have certainly some time ago in the *Medical Record* pictured an apparatus for combined boiling, steam and dry heat, but I do not recommend it for instruments anyhow, as the boiling pan will require too great dimensions so far as the transportable apparatus is concerned when they are to be made circular—the most convenient and inexpensive form for steam sterilizers.

In conclusion, a few words in regard to our dressings which are particularly fitted for steam sterilization. They can in the course of half an hour be made ready for use in a transportable or smaller apparatus. In military service it is, however, very desirable to have them ready without notice. I have already demonstrated how we can always have ligatures and sutures at hand in sterilized form; I have not been able to do the same for instruments, while Bloch has happily solved the question for the dressings. He has proposed to wrap them up in blotting paper in double layer. Blotting paper is impermeable to microörganisms so long as it remains dry, while steam penetrates it with ease. We arrange therefore the materials in small packages and mark the quantity and quality of the contents on the outside. These packages are placed in the sterilizer, steamed and dried in the ordinary manner. To protect against moisture they should subsequently be placed in tin boxes. These packages will remain aseptic as long as they are kept dry; if in doubt, an additional sterilization is given. Anyone opens the outer blotting paper, while the surgeon or his first assistant handles the inner wrapper which holds the dressings. I believe that Bloch's method is eminently adapted to military surgeons, who must exercise their important and responsible work under exceptional and difficult conditions.

A CASE OF NON-OPERATIVE CURE OF ACUTE PYONEPHROSIS.

BY DR. ALEX C. WEINER.
CHICAGO, ILL.

Mrs. X., 28 years of age, had always enjoyed vigorous health. Six weeks before I saw her she had a miscarriage and unfortunately became infacted on the removal of the fetus. Then, upon advice she underwent a laparotomy, because an extra-uterine pregnancy had been diagnosed. This, however, proved to be an error, and after three weeks she was sent home. Ten days later, by request of the sister of Mrs. N., a trained nurse, I was called, and found the patient with the apnearance of a pyemic condition, extremely pale, blue lips, cold sweats all over the body, several chills daily, sleeplessness and loss of appetite. The temperature had gradually risen to 104 degrees; pulse 130, weak and intermittent; urine scant and very concentrated, passing eight ounces in twenty-four hours, and containing a small quantity of pus, after filtration through sugar, no albumin was found. Internal examination revealed an acute metritis and parametritis, forming an exudate the size of an orange in the right pelvis. The abdomen was soft in the lower part, considerable tension and extreme sensitiveness toward the right hypochondrium. In the right hypochondric region there was a tumor the size of a child's head, moving with the respiration and apparently connected with the right kidney, which led to the diagnosis of an acute pyonephrosis. I expected to be compelled to open the abscess and informed the relatives to that effect; but first I preferred to give Ozanate Lithia Water a trial, because of its formula: Lithia peroxyhydrate in White Rock Spring Water and charged with ozocarbonic acid gas, although I did not expect it to have much effect. The only therapy administered consisted of hot applications over the tumor, and two quarts of Ozonate Lithia Water daily, hypodermic injections of nitrate of strychnia. One thirty-second of a grain every three hours to overcome the critical condition of the heart muscle and milk diet. The result was the desired one. In three days the amount of urine increased to fifty ounces per twenty-four hours, containing a large quanty of pus. In eight days the patient was practically well, though still very weak, the pyonephrotic tumor having entirely disappeared.

This case clearly demonstrates that this water is a strong stimulator of the kidneys to secretion in renal disturbances. The great pressure from above is able to force a large quantity of pus out of the pelvis of

the kidneys in a very short time and dilute the pus to such an extent that it passes through the ureter without producing colic pains.

Since then I have treated numerous cases of acute cystitis with Ozonate Lithia Water, and all patients have remarked the immediate relief from painful and frequent micturition. Although I have not made chemical researches as to the secretian of urates under the treatment, there is a decided improvement experienced in all the different troubles based upon the overcharged condition of the blood with uric acid. The continuous use of this water after recovery can only have a beneficial effect, inasmuch as it would be preventing a recurrence of the disease.

A contra-indication to the extensive use of the water is the parenchymatous inflammation of the kidneys, as the Lithia, according to recent researches, is likely to stimulate the disease. On the other hand two or three quarts of the water are useful to wash out the kidneys and relieve the tubuli contorti from the presence of casts without being harmful. In cases of dropsy produced by heart disease, the use of the water ought not to be advised, as the amount of fluid embodied increases the work to be done by the diseased organ.

34 Washington Street.

REPORT OF AN EPIDEMIC OF TYPHOID FEVER AND THE USE OF THE WOODBRIDGE TREATMENT.

Read before the Portage County Medical Society, November, 1895.

BY JOHN J. ORTON, M.D.
HEALTH OFFICER, RANDOLPH, OHIO.

Gentlemen:—There is a rule in rhetoric which I think is called Pope's Rule:

> "In words, as fashion, the same rule will hold,
> Alike fantastic, if too new or old;
> Be not the first by whom the new are tried,
> Nor yet the last to lay the old aside."

This is a good rule to follow in the use of medicine as well as words. Nearly every mail brings us one or more circulars, singing the praises of some new remedy and it would be difficult and unwise to test them all. Being naturally conservative, and remembering the teachings of one of the now deceased professors of my Alma Mater to avoid "journal practice," it was with doubt and hesitation that I began to treat typhoid fever by the "Woodbridge treatment."

During September and October, our little village of about 250 inhabitants passed through one of the worst epidemics of typhoid fever in its history. Since May, 1895, twenty cases of typhoid fever have occurred in my practice. All but one, or possibly two, originated in this place. One came here sick from Cleveland, but not until toward the close of the epidemic, and one, a traveling salesman, became ill while away and came home; there is no way of telling whether his disease originated here or away, as he is often at home over Sunday.

Six persons have been sick with fever soon after leaving this place and five of these six have died. Three of the twenty cases under my care have died; two of typhoid fever alone, and one old gentleman of typhoid fever complicated with serious chronic diseases. At the beginning of the epidemic I searched the text-books in vain for some treafment that might prove satisfactory. All said that typhoid fever could not be shortened by a single day. Loomis, whose work on practice was the first I bought, and for whom I entertain great respect and admiration, says: "The duty of the physician is to guide the disease, as far as he may be able, to a favorable issue and prevent injury to organs essential to life, keeping in mind that a certain definite period must elapse before this result can be accomplished."

Having read some of the articles on typhoid fever written by Dr. J. E. Woodbridge, of Youngstown, Ohio, I was favorably impressed with the results he reported from the use of his treatment, and wrote to him for instructions and obtained a supply of tablets put up by Parke, Davis & Co. according to his formulæ. Not being satisfied with the results I obtained, I went to Youngstown to see Dr. Woodbridge personally, but found that he was in Chicago. My journey was not in vain, however, for I was very kindly treated by Dr. M. V. Cunningham, who had charge of Dr. Woodbridge's practice during his absence and who told me all I wished to learn in regard to the use of the remedies used by Dr. Woodbridge.

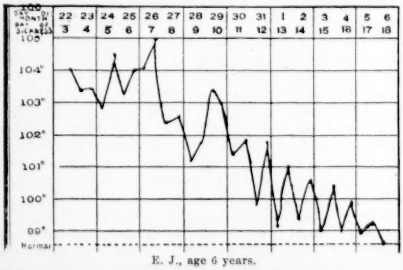
Since my return I have had excellent results in the treatment of typhoid fever; all of my patients have improved under this line of treatment, some of them more rapidly than I dared to hope for. I have the pleasure to-day of showing you several charts which differ from those shown in the text-books. These charts show a step-like decline to the normal temperature, which, in most of them, is reached in two weeks or less. On one, the normal line is touched in ten days, although there was a slight fever in the afternoon for five days longer. One of them shows the normal line touched on the twelfth day of treatment, and sixteenth day of disease, and one shows the same result on the fourteenth day of treatment and seventeenth day of illness. All of these patients had the rose spots and other symptoms necessary to establish a positive diagnosis, and three of them were seen by other physicians who confirmed my diagnosis of typhoid fever. As yet I have not been able to obtain as brilliant results as Dr. Woodbridge reports, but have found that, if the medicine is perseveringly used, the temperature will invariably decline, delirium, tympanitis and other alarming symptoms will disappear and an early convalescence will follow.

The medicine must be pushed as fast as possible until the temperature falls below 100 degrees or these results will not be obtained. No. 1 should be given every fifteen minutes for twenty-four or thirty-six hours; then No. 2 every fifteen minutes to every half-hour right along until the temperature falls below 100 degrees. By the end of the first twenty-four or forty-eight hours of treatment the medicine should have produced five or six or more free evacuations of the bowels, and, should one tablet of either No. 1 or No. 2 not be sufficient to produce this effect, two or three or more may be given at each dose. The size and frequency of the dose may now be reduced so as to produce a gradual decrease in the frequency of the movements each day, until, by the time the temperature has touched normal, one or two free evacuations of the bowels occur during each twenty-four hours, and at no time should a day pass without this action being accomplished. About the third or fourth day No. 3 should be commenced and should be given every three or four hours until the temperature remains normal. If the temperature again rises No. 2 should be pushed energetically. Of course the patient must be closely watched, and if any symptoms of ptyalism should occur omit the tablets for a day

or two and give a saturated solution of potassium chlorate, a teaspoonful every three hours, returning to the tablets as soon as possible.

I have met with one patient, a lady 46 years of age, who did not tolerate the mercury well. After three days' use of the tablets she suffered with slight ptyalism and sore gums but it was not very severe. I stopped No. 2 and gave the potash solution for forty-eight hours. I then gave small doses of podophyllin, gr. 1-8 to 1-6, every four hours alternating with No. 3. She did well on this treatment. I believe that by the careful use of these remedies, or by a similar line of antiseptic treatment, more lives can be saved than by any other plan. Stimulants and tonics should be given if indicated, but with this treatment they will not be needed as often as by the older methods. Plenty of cold (not iced) boiled or distilled water should be given and the patient encouraged to take several swallows with each dose of medicine. Milk diet should be enforced and no solid food given until the temperature remains normal. If the patient has an aversion to milk, some good liquid food can be given, but milk should be taken also in smaller quantities than when used alone. The following report of two cases show how the medicine can be pushed:

E. J., age 6 years, began to complain October 20. On the evening of October 22 I saw him and found a

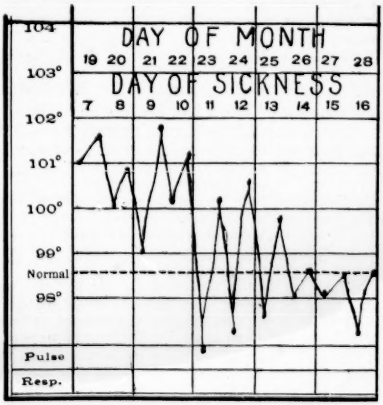


E. J., age 6 years.

temperature of 104 degrees. I gave No. 1 every half hour for thirty-six hours; then No. 2 every twenty minutes a part of the time and every half hour a part of the time until October 31 (nine days), when the temperature reached 99.8 degrees. The tablets were then given less often, and teaspoonful doses of liquid peptonoids, with creasote and guaiacol, were given every three hours. This patient was so young that I did not try to give No. 3, as I feared that he could not swallow the large capsules. On October 26 his temperature was 105 degrees, but fell day by day till it touched normal a few hours over fourteen days of treatment, and on the seventeenth day of illness. Although this boy took the tablets very often for nearly two weeks, castor oil was frequently given to obtain sufficient movements of the bowels.

On October 15, Mrs. O. H., age 71 years, first felt that she was not as well as usual. She had been assisting in the care of her daughter who came from Cleveland, five weeks before, sick with typhoid fever. On October 16 she was obliged to go to bed and her temperature rose day by day till it reached 101.6 degrees on November 19. Then I gave tablets of Dr. Woodbridge's No. 1 at 9 A. M., and gave them every twenty minutes until 10 P. M.; then every half hour till 2 P. M. on the 20th. The temperature then being only 100.5 degrees, tablets were given every half hour till 5 P. M. The temperature then having risen to nearly 101 degrees, No. 2 was given every half hour till 9 A. M. on the 21st when the temperature was 99 degrees; No. 2 was given every hour till 2 P. M., then every half hour as the temperature was rising and continued till 10 P. M.; then every twenty minutes till 1 A. M. on the 22d; then every half hour till 9 A. M. At 9:30 the temperature fell to 96.6 degrees, but the pulse was 82 and good. Stimulants were given and hot applications made to the feet and limbs; her temperature rose to 100.2 degrees in afternoon. The next morning the temperature fell to 97 degrees and went to 100.6 degrees in the afternoon.

The temperature was sub-normal for three days and longer, and rose slightly above normal in the afternoon gradually having less departure from normal either above or below. Tonics and stimulants were given when temperature was below and Woodbridge tablets or capsules when above. This lady took the Woodbridge medicine seven days, when the temperature remained normal, or slightly below in the



Mrs. O. H.

morning. She told me that she nearly always had a sub-normal temperature when recovering from any sickness. This was an interesting case to me, as most text-books say that it is extremely rare for a person in advanced years to have typhoid fever. She had rose spots, tenderness over the bowels and enough other symptoms to leave no doubt of the correctness of the diagnosis.

Eight persons received the Woodbridge treatment with no death. In every case the effect of the medicine was plainly shown by a decline in the temperature and improvement in all symptoms. Those who received the treatment early had no dry tongue and but little tympanitis or diarrhea.

Twelve patients received other treatment with three deaths. No doubt deaths will occur under any plan of treatment, but I believe that the mortality from typhoid fever would be greatly lessened if physicians would use the Woodbridge treatment. I had excellent opportunities during this epidemic to test their efficacy, and, until something better is found, shall continue to use them in typhoid fever.

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SATURDAY, FEBRUARY 1, 1896.

IS THE MEDICAL EXAMINER AN OVER-ESTIMATED INSURANCE OFFICER?

The *Medical Examiner*, November, states that the insurance press has lately been discussing the value of the Medical Examiner in his relation to insurance, which is summed up by the *Guardian* in the proposition that perhaps, after all, the high value set upon the services of the medical examiner is an inflated one, and that his true merit should be quoted at a much lower figure. The *Underwriter*, also, has a short article upon the medical man in his insurance capacity, in the course of which it makes sundry charges and insinuations. One of these has reference to the organization of Medical Directors of Life Insurance, which is defended by the *Examiner* as a non-secret association, whose interests are in harmony with the companies to which its members belong; and the knowledge which these members obtain or extend through their association must be useful to their companies. This must especially be true in respect of rejected risks. But risks once rejected must not be assumed as of necessity and in a routine manner, to be destined to future rejection. "No company," says the *Examiner*, "would tolerate such a proceeding. Simply because a case has been rejected by another company is no reason for a further rejection, off hand, without due investigation." As a matter of fact, the rule is that every applicant for insurance is given an individual hearing, and companies have a right to make thorough preliminary inquiries about him before incurring the expense of an examination. The vast majority of applicants give this information themselves, as they are specifically asked in the application whether or not they have been rejected.

"No insurance examiner has a prejudice against a symptom. Certain symptoms or signs indicate certain conditions, and according to the condition so will be the opinion on the case. He has no business to be prejudiced either one way or the other. He has a duty to perform, and a conscientious examiner will do it without fear or favor. He has no right to let his prejudice enter into the question, otherwise he is a hindrance, not a help to the business. Companies employ him for his supposed ability to detect or exclude conditions which render the applicant an unfit subject for insurance; or, in other words, a life or a case which, if accepted, would bring a loss instead of a profit to the treasury of the company. Insurance companies can not dispense benefits if their business is a losing one. The doctor is valuable to them in so far as he is an aid in the acceptance of risks which will prove a benefit or a profit to them, and in excluding those which are uninsurable."

How far an examiner may allow his personal and peculiar views, as to cardiac symptoms, or those referable to the lungs or the kidneys, to weigh in the rejection of candidates, is a question that may safely be left with the company to watch and determine. If a medical man makes a practice of accepting or rejecting a certain group of candidates, and does so contrary to the light of the present-day pathology, he is likely to have but a short official tenure. In other words, the true and best interests of the companies move along in parallel lines with those of their medical advisers; the judgment of the latter may be at fault at times; the medical examiners themselves may not always be of one mind regarding the interpretation of risks, but the net result can hardly be any other than a vindication of the claim of the *Examiner*, that the day has not yet come when the companies can dispense with their almost universally trusted and trustworthy examiner. The value of the latter to his company will possibly, in the future, be placed at a higher rather than "a lower figure"; for a higher grade of specialized training is year by year being undergone by the medical profession.

THE FEES OF AN EXPERT WITNESS.

We have heretofore adverted to the case of DR. J. N. DIXON, of Springfield, Ill., and in our issue of April 13, 1895, we published in full the opinion of JUDGE CREIGHTON. Our readers will recall that this case arose in a suit for damages for injury caused by a defective sidewalk, brought by Olive Purdy against the city of Springfield, Ill. DR. J. N. DIXON being called as a witness by the city, having no knowledge of the facts in the case, was called as an expert, and when asked a hypothetical question declined to answer on the ground that an expert witness is entitled to a different and greater compensation than an ordinary witness is allowed, and that an expert is not required to give expert testimony without compensation as an expert, unless a reasonable compensation shall have been paid or provided for; that he had not been paid nor offered anything for compensation for

his expert or professional opinion in the case, a fee of $10 having been asked for by him and expressly refused. The judge of the Circuit Court of Sangamon County then demanded that the Doctor answer the question and on his continued refusal fined him $25 for contempt of court. The Doctor thereupon appealed the case to the Appellate Court, and an opinion affirming JUDGE CREIGHTON'S opinion has been handed down.

The opinion of JUDGE CREIGHTON was remarkable for its thinly veiled sarcasm, and its arrogant statements in regard to physicians.[1] "Physicians in this State," says this learned Judge, "are the favored children of the State; a department of the State government is maintained very largely for their benefit; they hold a license to practice their profession and practice by grace as well as by right, and are so hedged about and protected by the laws of the State, and by public opinion and confidence, that in five minutes of time a doctor may earn more than an ordinary laborer could earn in a day." Exactly what this very remarkable paragraph had to do with the case, except to show the bias of the Judge is not very clear, and we fear that if our legal luminary were placed on the witness stand and asked what department of the State government is maintained very largely for the "benefit" of the medical profession, he would cut a very sorry figure.

When a Judge on the bench descends to such an attack on the medical profession, he makes an unwarranted use of his position, and necessarily lessens respect for the opinions of his court. Such statements would answer admirably for a DOGBERRY, but have no place in the enlightened jurisprudence of the nineteenth century.

The text of the decision of the Appellate Court, the HON. GEO. W. PLEASANT, presiding justice, is as follows. It will be noticed that it is entirely devoid of the wild statements and absurd declamation which we have pointed out as characterizing the "opinion" of JUDGE CREIGHTON:

STATE OF ILLINOIS.
APPELLATE COURT—THIRD DISTRICT.
May Term, 1895. Filed Dec. 2, 1895.
Docket No. 114. Agenda No. 103.

JOHN S. DIXON vs. THE PEOPLE, &c. } Error to Sangamon.

OPINION.

Per Curiam.

The appellant, a physician and surgeon, was brought into Circuit Court of Sangamon County by the ordinary process of subpœna to testify as a witness in behalf of the defendant in a case then pending against the City of Springfield, brought to recover damages for personal injuries which the plaintiff alleged she had received from a fall upon a defective sidewalk.

The appellant knew nothing whatever of the facts of the case, and he declined to answer a hypothetical question propounded to him calling for his professional opinion upon the assumed state of facts mentioned in the question, except upon the payment of a fee of $10. He persisted in such refusal and the Court ruled he was in contempt and assessed a fine against him.

It is conceded the fee demanded was reasonable in amount and no question is raised in the brief as to the power of the Court to inflict a fine as punishment for contempt in refusing to answer any question which the law required the witness to answer, and therefore the sole question presented is: Could the appellant, under the circumstances, lawfully decline to give his professional opinion without reasonable compensation? As far as we are advised the question has never been directly passed upon in Illinois.

Nor can any rule be drawn from the currents of judicial decisions in other jurisdictions or from a concurrence in the views of text writers, so widely at variance and so directly in conflict are the opinions of different courts and law writers upon the subject.

It is not contended the reasonable compensation demanded by the appellant could be taxed as costs, but that the party desiring his professional opinion should be required to compensate him therefor, before the law should compel him to express that opinion for the benefit of such party. We think the court ruled correctly in holding the law required the witness to answer the question.

The statute has fixed the compensation to be paid all witnesses and the law requires every person without regard to his calling or engagements, to appear as a witness when duly subpœnaed and to accept as full compensation the statutory allowance however inadequate it may be.

The administration of justice in the adjustment of the contentions growing out of the business affairs or concerning mere private personal property or property rights of its citizens is one of the most important sovereign duties devolving upon the State. Upon the performance thereof depends the public peace and tranquility, and the safety and security of the property, reputation, person and family of every private citizen. Every citizen is therefore deeply interested in the proper discharge of that duty. It can only be discharged through the medium of judicial tribunals. Without the power to compel witnesses to attend and disclose facts in their knowledge pertinent to these contentions these tribunals are powerless to perform their functions. No distinction can, we think, be drawn between different kinds of knowledge, nor can a witness decline to make known facts which have come to his knowledge either by observation or study and experience, upon the ground that he can use such facts or knowledge for his pecuniary benefit in the business affairs of life, when the disclosure thereof is important to the attainment of justice in the courts.

No reason is perceived why compensation beyond that fixed by the general laws of the State should be allowed to this class, or to any one class of experts, unless it is allowed to every other class, of which there are many—some works on expert testimony enumerate as many as seventy classes of expert witnesses. To hold each member of these different classes of witnesses may lawfully demand that litigants shall arrange for the payment of reasonable compensation before he can be compelled to disclose in open court facts in his knowledge relating to the right and justice of causes there pending for determination would be impracticable and would often operate to subject a litigant to financial burdens so great as to practically deny him a hearing in the courts, would tend to make the administration of the law depend upon the financial ability of the suitors to compensate witnesses in order to have the benefit of facts in their knowledge, and to bring such testimony into discredit as having been purchased, and to attach scandals and grave suspicions to expert witnesses and expert testimony. Nor does the rule requiring experts to testify for legal fees deprive the witness of his property for public use.

Knowledge gained by study, observation and experience is not property within the meaning of the word as used in Section 13, Article 2 of the Constitution, wherein it is provided that private property shall not be taken or damaged for public use without just compensation. The word in its appropriate sense means tangible things and rights which accompany or are incident to the use, enjoyment or disposition of such things. (See authorities collected in Note 1 to page 284, Vol. XIX, Amer. and Eng. Ency. of Law.) In C. W. I. R. R. Co. vs. E. C. R. W. Co., 115 Illinois, page 385, it was said: "Property itself in a legal sense is nothing more than the exclusive right of passing enjoyment and disposing of a thing." The ordinance of 1787 has no operative force in this State, except so for as its principles are embodied in the Constitution.

The People, etc. vs. Thompson, 155 Illinois, page 451.

The judgment is affirmed: Affirmed.

That there is conflict of opinion the court clearly states, and we understand that DR. DIXON has taken an appeal to the supreme court of Illinois.

HON. JOHN A. STERLING, in an article in this JOUR-

[1] See the text of this opinion in this JOURNAL April 13, 1895, p. 571.

NAL March 17, 1894, p. 381, states: "It is the prevailing rule that the expert witness is entitled to demand and receive adequate compensation for his opinions on the stand; and he can not be required to speak until it is assured. This applies only where he is called to give a professional opinion on a scientific question."

The opinion of HON. W. A. PURRINGTON, of New York,[2] so clearly expresses the existing situation in this country on this point, that we reproduce it.

The rule as to the fees of expert witnesses varies with the jurisdiction. In New York, although under general subpœna a physician must of course appear in court and testify to facts of the case within his ordinary observation, he will not be compelled to give his opinion on matters of skill and science. And therefore it is proper for the district attorneys to employ medical experts on behalf of the people. The fact that an expert has received a large fee does not make his testimony incompetent or afford ground for a new trial. But this rule of compensation is not the same, however, in all jurisdictions, and the contrary was held in a laboriously argued Alabama case. Some States have regulated the matter by statute. Thus, in Minnesota the judge is authorized to allow an expert witness "such fees or compensation as may seem just and reasonable," and it might seem, therefore, that such a witness might refuse to testify until he received at least the promise of what *he* thought a just and reasonable fee. But the supreme court held, approving the reasoning of *ex parte* Dement, that this provision of law had reference to an allowance to be made after the witness had been dismissed, not before. In Colorado, if the expert witness testifies under subpœna without making an agreement in advance for his compensation, he is only entitled to statutory fees. The Indiana Code of Civil Procedure provides for compelling an expert witness to testify without extra compensation. But prior to the enactment of this rule in 1881, the courts of that State had laid down the same rule as in New York. The English rule is that one called as a witness to give his opinion on a subject with which he is peculiarly conversant from his employment in life, is not bound to testify unless the party calling him "pay for his time," and in a comparatively recent case an auctioneer was said to be a professional witness and not bound to testify even if sworn, until his fee, expenses, or compensation for time at a guinea a day, were paid.

Since this work appeared the Arkansas supreme court has decided a case, Jan. 26, 1895, but this was a criminal case and the question turned on the Arkansas statutes.[3]

Should the supreme court of Illinois affirm the opinion of the lower courts in the case of DR. DIXON, the necessity will again be emphasized for supporting the ILLINOIS STATE MEDICAL SOCIETY in its appeal to the legislature for a proper statute for regulating this matter, and whatever may be the result of this appeal to the highest State Court, DR. DIXON is deserving of the highest praise from the profession of his State for the pluck and energy with which he has fought against the unjust ruling which placed him in technical contempt of court.

THE ETIOLOGIC RELATION EXISTING BETWEEN CERTAIN NEUROSES AND DIET, AND ITS THERAPEUTIC APPLICATIONS.

Adopting the comprehensive definition of CHOMEL as the simplest expression of what we mean by disease, that it is "the occurrence of an obvious disorder, either in the material disposition of the constituent parts of the living body, or in the exercise of functions," it is evident from our knowledge of cellular pathology, that errors of nutrition must necessarily play an important part in the causation of disease. This, as a doctrinal teaching, has long been accepted by clinicians; but there is still lacking in medical practice evidence of a clear knowledge of the relationship existing between special forms of disease and diet and also a want of agreement as to the application of the principles of dietetics in the management of certain maladies, which are mainly attributable to nutritive disturbances. When ABERNETHY in his blunt phrase declared that "three-fourths of all diseases are caused and can be cured at the table," he expressed a thought which has entered the mind of every experienced and observing physician. The popular belief that food may exert a pathogenic influence, which is embodied in the saying, "What's one man's meat is another man's poison," could scarcely have a better exposition of its scientific foundation than was given by HIPPOCRATES in one of his aphorisms: "Wherefore, I say, that such constitutions as suffer quickly and strongly from errors in diet are weaker than others that do not; and that a weak person is in a state very nearly approaching to one in disease; but a person in disease is the weaker, and it is therefore likely that he should suffer if he encounters anything unseasonable."[1] In other words, just as a man may have a congenitally inadequate liver or kidneys, so he may have congenitally inadequate digestive organs. This is a fact which strictly speaking does not belong to dietetics, but which must not be lost sight of in arranging dietaries for individual instances of disease. This is a trite observation, but it will bear repeating. Although physiologic experiment has shown that the brain and spinal cord apparently, of all the soft parts, endure privations the best and relatively suffer less loss of weight during prolonged abstinence from food, it is true clinically that altered innervation is one of the earliest symptoms of disturbance of nutrition. Some years ago OLIVER WENDELL HOLMES directed attention to the influence of food upon vital phenomena in the following characteristic style: "Most assuredly I do believe that the body and mind are influenced by the food habitually depended upon. I am persuaded that a too exclusively porcine diet gives a bristly character to the beard and hair, which is borrowed from the animal whose tissues these stiff-bearded compatriots of ours have too largely assimilated. I can never stray among the village people of our windy capes without now and then coming upon a human being who looks as if he had been split, salted and dried like the fish which has built up his arid organism. If the body is modified by the food which nourishes it, the mind and char-

[2] A System of Legal Medicine, by Allan McLane Hamilton, New York, 1894.
[3] See Jour. Amer. Med. Assoc., June 22, 1895, p. 991.

[1] Sydenham Society's translation.

acter very certainly will be modified by it also. We know enough of their close connection to be sure of that without statistic observations to prove it." SHAKESPEARE makes Sir Andrew Ague-Cheek incidentally express much the same opinion in "Twelfth Night": "Methinks, sometimes, I have no more wit than a Christian or an ordinary man has; but I am a great eater of beef and I believe that does harm to my wit."

Coming now to the etiologic relation existing between certain neuroses and diet, it is to be observed that neurasthenia and the peculiar state of the nervous system inappropriately termed hysteria, are curable by the WEIR-MITCHELL plan of feeding and rest, on the lines laid down in his booklet on "Fat and Blood, and How to Make Them." Epilepsy is to a large extent a dietetic disease; at least it has been claimed, on good authority, that a non-nitrogenous diet alone without drugs will bear better results than the bromids without restriction of diet. Similarly in the treatment of delirium tremens, the late J. HUGHES BENNET becoming convinced of the inutility of tartar emetic, opium and other drugs, abandoned them entirely and gave nothing but nourishment as soon as the patient could take it, the result being, in his own words, "all the cases that enter my wards recover." The delirium of low fevers, according to the teachings and practice of DA COSTA, is very often due to debility and is an indication for increasing the nourishment. The use of a non-stimulating diet is required in the treatment of chorea, night-terrors and other manifestations of a neurotic inheritance in young children. Asthma, considered as a reflex neurosis, is closely allied to epilepsy and requires careful supervision of the diet. The late DR. RANDOLPH, of Philadelphia, conferred immunity from attacks for months upon an inveterate asthmatic subject, by the administration of predigested or peptonized food. The relation of cause and effect was shown by the fact that whenever the patient would return to his ordinary table diet the paroxysms would reappear. It is a matter of common observation that a heavy supper or indulgence in certain articles of food are liable to bring on an attack in a patient having the asthmatic predisposition. Neuralgia is now often interpreted as the cry of a nerve for better nourishment, and food is given the precedence over anodynes in the treatment. Closely related to this is the subject of visceral neuroses. The late PROF. WILLIAM GOODELL once said to his class, "Gentlemen, the crying medical error of the day is, in my opinion, the mistaking of nerve disease for womb disease." The form of nerve disease which he particularly referred to was that which has been so successfully treated by the WEIR-MITCHELL method, to which allusion has already been made. There can be little doubt that many women who have been subjected to gynecologic operations and have recovered, owe their recovery less to the mutilation they have undergone than the strict regimen and good care which attended the operation.

The recognition of alcohol as a factor in many neuroses unfortunately does not always direct us to success in treatment, because when the case comes under observation the lesions are so far advanced that their repair and restoration is impossible, although their progress may be delayed and the morbid processes held in abeyance. Kakké or beri-beri, a form of multiple neuritis, has been shown by DR. TAKAKI to be caused by a rice diet, where the rice is of inferior quality and partly spoiled. Its nature being recognized, beri-beri has been banished from the Japanese navy by diet-regulation, in the same way that scorbutus has been driven from ships of other civilized nations.

In the treatment of insanity, while admitting the underlying neurotic predisposition, it is universally acknowledged that diet is a potent aid to recovery. In a recent paper DR. KIERNAN states that in acute confusional insanity, the treatment consists in "proper nutrition, quiet and relief from agitation, psychoses of this type being due to systemic exhaustion and not to toxemia." If, as has been asserted by DR. THOMAS MAYS, pulmonary phthisis is less an infectious disease than it is a neurosis, the importance of food in the treatment of consumption receives an additional emphasis.

It is worth noting that the yelk of egg contains lecithin, a form of phosphorized fat, which is very similar in composition to the characteristic proximate element in nerve substance and, therefore, egg-yelk is one of the most important articles of food for the class of cases under consideration, being convenient, and, when given with milk or wine, usually acceptable to the patient, and also easily assimilated. The caffein-bearing group of stimulants, coffee, tea, cacao and kola, are habitually used as articles of diet and their deprivation during illness may produce symptoms of nervous disorder, as pointed out by Dr. I. N. LOVE, in a very practical paper on "Coffee," read before the Mississippi Valley Medical Association in 1891, in which attention is directed to the clinical fact that restlessness, insomnia and other nervous symptoms may be attributable to the withdrawal of some accustomed stimulant rather than to the influence of disease.

INFLAMMATORY AFFECTIONS OF THE COSTAL CARTILAGES.

The affections of the costal cartilages are but little known. The majority of our text-books and systems of surgery do not touch upon the pathology of the costal cartilages. RIEDINGER in his article in volume XLII of *Deutsche Chirurgie* devotes the larger part of

one page to the tuberculous chondritis and emphasizes the necessity of the most thorough treatment because the process has a very marked tendency to return. DITTRICH[1] describes, in 1893, sixteen cases of tuberculous chondritis from PROFESSOR ESMARCH'S clinic. HELFERICH[2] wrote about costal chondritis after typhoid fever in 1890, and additional scattered references to this subject may be found here and there in the literature. The paucity of the literature on the subject, the nevertheless undoubted frequency of costal chondritis, and the theoretical and practical interest in this important part of the pathology of cartilage, led PROFESSOR BERG, of Stockholm, to publish some very valuable results of his clinical studies in this subject.[3] BERG has treated thirteen hospital and three private patients for inflammatory processes in or connected with the costal cartilages. Four additional cases placed at his disposition by professional friends bring the total number of the cases studied by him up to twenty. Of these, fourteen were men, six women. As to age, one case occurred in the second, five in the third, three in the fourth, six in the fifth, and five in the sixth decennium.

Concerning the etiology, one of BERG'S cases, a tuberculous chondritis, is very instructive because it shows very clearly that traumatism upon two separate occasions and involving separate cartilages is followed in each instance by tuberculosis in the cartilages subjected to injury. The essential cause of costal chondritis is, of course, some form of microbic infection. In all of BERG'S cases, except two, the patients presented themselves with fistulous openings, so that a bacteriologic examination was omitted. In one of two non-fistulous cases the typhoid bacillus was present in pure culture, and in a new case observed during the printing of the article, the bacillus coli communis was present in pure culture. Studying his cases carefully from a clincial point of view, but with special reference to the etiologic factors present, BERG separates the following groups: 1. Tuberculosis. In seven of the twenty cases the process was undoubtedly tuberculosis; in only one could the process be said to be due to direct extension, namely from the sternum; in the others the disease seemed to be isolated. In four of the seven cases there were distinct pulmonary signs of tuberculosis, but any evidence showing the direct extension of the process from the pleura to the cartilages was not obtainable. Tuberculous chondritis may occur as the only expression of a tuberculous infection in otherwise healthy individuals. 2. Typhoid fever. This disease preceded the development of the chondritis in seven cases; in one case the chondritis began during the actual attack; in four the first signs of the cartilage affection developed in from four to six weeks after the beginning of the typhoid fever; in two the time that elapsed was much longer. As already stated, in only one of these seven cases was there a bacteriologic examination and this showed typhoid bacilli only. 3. Syphilis. In one case a syphilitic perichondritis gave rise to the symptoms that led to surgical interference. 4. Septic infections. In four cases the connection of the chondral process with common forms of septic infection seems natural; in one case the chondritis developed eight days after a lobar pneumonia; in another case this relation to pneumonia was a little less striking; in the third case of this group the pneumonia developed on the day after the operation of laying open a fistulous tract that led to an abscess behind the fourth right costal cartilage; the fourth case seemed to be due to a general acute infection accompanied with acute nephritis.

The course and the symptoms of costal chondritis seem quite similar in the various etiologic groups. A marked chronicity seems to be quite general. The disease begins with spontaneous pain or limited tenderness in the chest well, sometimes accompanied with a local swelling. The pain is described as stitch-like. The tenderness is often sharply confined to the precise area in which the operation subsequently discloses a focus in the cartilage and this may therefore be an important early diagnostic symptom as was the case in one of BERG'S cases. The relation as to time between the pain or tenderness and the development of a visible or palpable swelling is, of course, variable. The swelling is usually quite hard at first, often peculiarly flat and distinctly connected with the underlying cartilage. Sooner or later the skin becomes red, the swelling soft, often very extensive, and spontaneous evacuation may occur. The fistulæ that result invariably require surgical treatment in order to heal definitely. It is self-evident that the external opening of the fistula may be located far away from the primary cartilaginous focus.

The microscopic changes seem to point to the perichondrium as the seat of the first and earliest changes in the majority of the cases. In four of BERG'S cases there was abscess formation underneath the cartilage lying either upon the pleura or the pericardium. The process has a distinct tendency to spread in the wall of the thorax and to involve more than one cartilage, although the possibility of a primary infection of many cartilages at the same time can not be denied. In the twenty cases of BERG, twelve showed only one cartilage to be attacked; four cases showed two, two cases showed three, and in two cases four cartilages were involved. The distribution of the process in the various cartilages is as follows:

Costal cartilage, number	II	IV	V	VI	VII	VIII	IX	X
Number of times involved	1	2	6	5	8	6	2	1

The naked eye examination showed in all cases

[1] Festschrift z. Esmarch, 1893, p. 247.
[2] Centrlbl. f. Chirurgie, 1891.
[3] Nord. med. Ark., 1895.

except the one of syphilitic perichronditis that the perichondrium, as well as the cartilage, present distinct changes. The perichondrium is thickened and may be either abnormally loosely or abnormally firmly attached to the cartilage. In one case there was a distinct osteophytes attached to the perichondrium. In the cartilage itself the following gross changes were observed: Multiple, carious foci of destruction proceeding from without, due most likely to newly formed vessels and papillary outgrowths of granulation tissue from the perichondrium, and also central foci of disease consisting of cavities with irregular walls lined with granulation tissue and containing very minute cartilaginous sequestra or degeneration products; occasionally long channels may run from the central focus to the abscess in the soft parts. In only two of BERG'S cases did the sternum or the ribs show any osteomyelitis; in all the other cases the process was confined to the cartilages. In addition to foci of disease the cartilage may show more diffuse changes, being either very soft or abnormally hard and brittle, and often of a distinctly yellow color. The description of the histologic changes including the interesting study of metaplastic processes has been reserved for some future time.

The diagnosis may be difficult. Muscular rheumatism, pulmonary and pleural lesions and intercostal neuralgia might readily be inferred to be present during the early stages of the chondritis before swelling had appeared. Even after the development of the swelling the disease might be confused with tumors of various kinds, gummas of the muscles and inflammations limited to the soft parts of the chest wall. After the formation of fistulous passages the diagnosis would seem easy, especially when the probe leads to the cartilage, but the passage may be tortuous and lead to a carious focus on the deep surface of the cartilage. Careful examination as to the salient points in the history of the process is valuable. The early confinement of the pain or tenderness to a definite cartilage from which a swelling may subsequently have developed and other features that may be elicited are all important from a diagnostic point of view. The bacteriologic examination of the contents of the abscess may throw much light upon the process, and the fact that symptoms of ordinary tuberculous or other form of chondritis may be produced by syphilis should not be forgotten.

Finally BERG concludes his instructive study with the following summarizing conclusions in regard to the operative treatment:

1. Operation should be made as early as possible as soon as the diagnosis is made. Operation may be necessary in order to establish a definite diagnosis. If there be any reason to suspect syphilis antisyphilitic treatment should first be instituted.

2. Evidement may bring the process to a standstill, but usually only after repeated efforts, and knowing the exclusiveness and multiplicity of the changes in cartilages it is probably best to substitute typical resection for evidement.

3. In the greater number of cases the entire cartilage should be resected, including one or two centimeters of corresponding rib. But fast rules can not be laid down, as each case must be treated according to the indications presented, the location, nature and extent of the lesion being the essential guiding points.

4. The changes in the soft parts must be thoroughly removed in the tuberculous cases. In other abscesses the fistulous passages and the cavities must be thoroughly divided.

5. Aseptic wounds are difficult to obtain, especially in the cases with preëxisting external openings; consequently, attempts at securing primary union should be limited to the most favorable cases; secondary suture or open tamponade is the after treatment that in general promises the most favorable results.

PHYSICIAN AS WITNESS TO WILL WAIVES SPECIAL PRIVILEGE.

The California Code of Civil Procedure provides that "a licensed physician or surgeon can not, without the consent of his patient, be examined in a civil action as to any information acquired in attending the patient which was necessary to enable him to prescribe or act for the patient." But in making his attending physician a subscribing witness to his will, the supreme court of California holds, in the case of MULLIN'S Estate, decided Dec. 3, 1895, that a testator waives the privilege, and invites a full and proper examination of the matters and facts upon which his lips would otherwise have been sealed. Upon direct examination, the jury, in this case, was informed that the witness was a physician and surgeon, with years of experience and practice, and that he was the physician who attended the testator in his last sickness. Then, for their enlightenment, he was asked his opinion of the mental condition of the testator at the time of the testamentary act, and answered that the latter was of sound mind. The answer of necessity involved the use of the intimate knowledge acquired by the physician in prescribing for and treating his patient. It would be absurd, continues the court, to say that it was to be limited to the outward seeming and appearance of the patient at that particular moment, or, in other words, that the witness would have been justified in answering, for example, that from external appearances, and judging as a layman, his opinion was that he was of sound mind, but that using his professional skill and knowledge and intimate acquaintanceship with the patient acquired as his physician, his opinion was that he was mentally incompetent. Having answered that in his opinion the man was of disposing mind,

there were open to the cross-examiner two fields of inquiry: First, the soundness of the witness' judgment, or, in other words, his qualifications as an alienist; and second, the character of the patient's infirmities — that is to say, the facts and circumstances upon which the judgment was exercised and the conclusion reached. Here the witness was interrogated, upon cross-examination, as to the character of his patient's affliction, which appeared to be serous apoplexy, resulting in hemiplegia, and showing that the brain is involved and affected by this disease; likewise, that the accompanying paralysis evinced itself upon the Thursday preceding the Monday upon which the will was executed and the testator died. In addition, the witness was interrogated as to the disclosures which the autopsy made of the physical condition of the deceased, and finally he was subjected to a cross-examination, keen and comprehensive, touching his professional learning and qualifications, and as an expert. This cross-examination, the court holds, was confined within the prescribed bounds, and was strictly proper.

CORRESPONDENCE.

Castration as a Treatment for Crime, not as a Punishment.

AUSTIN, TEXAS, Jan. 21, 1896.

To the Editor:—In your editorial comments on my paper which was read at the recent meeting of the Chicago Medico-Legal Society (see issue of January 18), I regret to see that you misapprehend its entire trend and object. Surely, you did not read it. You convey the impression that its object was to advocate castration of *sexual perverts* as a *punishment*; whereas the subject of sexual perverts was scarcely alluded to, and I distinctly disclaimed, in the very first paragraph, all idea of punishment; deprecate further along, that our penal system is based upon the ancient idea of revenge, and that its chief end *seems to be punishment*. And, again, I say, "punishment should have no place in a civilized code." (You must have had in mind my paper on sexual perverts which was read at the Medico-Legal Congress in 1893.) Moreover, nothing was said in this paper about castration except incidentally as a factor in the reform advocated, to be made available in certain conditions named. You are away off, and have unwittingly done me an injustice by ascribing to me sentiments foreign to the paper, and then saying the concensus of opinion was opposed to them.

The paper was a plea for reform in criminal jurisprudence, based upon facts which go to show that our statutes are not only inefficient—assuming that the aim and object sought is the protection of society and the repression of crime—but that our methods of executing them contribute really to the increase of crime and criminals; that the cause of lawlessness as witnessed in occasional lynchings, is the outgrowth of this inefficiency; that the people see that the law, even when rigorously enforced, does not afford them protection, but, on the contrary, crime, and especially, rape, is on the increase, and it is the feeling of insecurity that drives them to seek by other means the protection of home and family. A plea was made for a discrimination or classification of criminals, based mostly upon the recent researches of Lombroso, who has shown that a large percentage of criminals are born so, the victims of heredity and environment, and are alike irresponsible and irreclaimable. This class I would regard as permanent enemies to society, and advocate their permanent sequestration—making them labor for their support and the benefit of that society whose privileges they have forfeited, and taking away, along with all *other* rights) that of procreating—inflicting upon a world a progeny, likely at least, to be criminal. And, with due deference to the learned legal gentleman who sneeringly said that "castration might do for Texas, but it would not be tolerated in an enlightened State like Illinois" (a remark not called for and worthy of a small mind), I will say that, unfortunately all the born criminals are *not* old men. But his objection that castration would be detrimental to moral character in the connection here stated, is too absurd; injure the *character* of a habitual, irreclaimable criminal!

Regarding all other criminals, the object of treatment or management should be reformation and restoration to society. This can be done in a very large number of cases; and the discipline should be instituted and executed under the supervision of intelligent medical men. It should be based upon, first, a correct diagnosis of each case. If of a reformable class, reform him; and the first step advocated was, to lift him above the environment calculated to harden him.

In brief, I endeavored to show that our penal system, based as it is upon the obsolete idea of revenge, retaliation, "an eye for an eye, a tooth for a tooth," is wrong and, naturally, ineffective; that as opinion has changed as regards insanity and inebriety, both of which were formerly punished as crime, so physicians are beginning to realize that crime in the habitual criminal is a disease and calls for treatment and *not punishment*. While I would not go so far as to say that all crime is the expression of a diseased state of mind, there is no doubt that much of it is, and the distinction between the state of the born criminal and moral insanity, if any, is too fine to be always recognized.

I pointed out the reluctance with which those who are intrusted with the making of statutes—for the most part persons who know nothing of the requirements of sanitary law—receive advice or information or suggestions; and ascribed as one reason, that there is no source whence the necessary knowledge can be obtained. I advocated, therefore, the creation by Congress, of a Department of Public Health, a repository for all knowledge bearing on health, whence it could be disseminated and utilized in the reconstruction of our statutes to bring them more in accord with the science of the day and a more enlightened civilization.

I regret that you did not read the paper more understandingly, because had you done so, I believe that you could not do other than endorse much that was there presented. It is only a matter of time; the changes that have taken place with regard to the management of the insane and the inebriate will sooner or later take place with reference to crime and criminals, and they will be managed more in accord with the dictates of humanity than at present. The great evil, next to the inefficiency of the penal code to fufill its ends, is the indiscriminate treatment of the young and old, the born criminal and the first offender. A young man commits a crime through impulse and immediately repents and would give worlds to undo it. He is treated with all the rigorous severity that is meeted to the hoary headed criminal. Very respecefully yours,

F. E. DANIEL, M.D.

Poisoning by Acetanilid.

QUINCY, ILL., Jan. 19, 1896.

To the Editor:—In our JOURNAL of Jan. 18, 1896, page 144, reference is made to a report in the *Virginia Medical Monthly*, by Dr. Ben. H. Broadnax, on the use of acetanilid. Having recently had in my own practice two cases of acetanilid poisoning, one terminating fatally, I can not, therefore, indorse Dr. Brodnax's recommendation for the use of this drug, particularly in new-born infants. A few weeks ago I prescribed for a

babe of four days, suffering with an erythematous inflammation of the skin of the nates, thighs and groins, a powder composed of equal parts of subnitrate of bismuth and acetanilid. During that afternoon and night the powder was dusted upon the inflamed areas three or four times. On the following morning the babe was found deeply cyanosed, and died a few hours later.

Before realizing that acetanilid was the cause of death in the case just noted, I prescribed the drug for another infant two days old. One application of the drug was made to the nates and thighs of the second child, about 10 P.M., and on the following morning this babe was also deeply cyanosed. Twenty-four hours later it had fully recovered from the toxic effects of the drug.

That acetanilid is not absolutely safe for external use in adults see reference in *N. Y. Med. Jour.*, Jan. 11, 1896, page 63, to a report in the January number of the *Yale Med. Jour.*, by Dr. William H. Carmalt, on "The Toxic Effects of Topical Applications of Acetanilid." The patient, a girl 18 years old, was suffering with an ulcer which had resulted from a burn over the larger part of the hand, in which there had been profuse suppuration. Powdered acetanilid was applied every four hours for twenty-four hours, when symptoms of cyanosis were observed. The employment of the drug was immediately discontinued and in twelve hours the symptoms disappeared." I have thus written that other physicians may guard against having a similarly unfortunate result from the use of acetanilid.

CHARLES W. ROOK, M.D.

Treatment of Obstruction of Lachrymal Duct.

DALLAS, TEXAS, Jan. 25, 1896.

To the Editor:—Dr. P. Richard Taylor, of Louisville, Ky., read a paper before the Falls City Medical Society, entitled, "Dacryocystitis," published in the JOURNAL of Jan. 4, 1896. In this paper, the Doctor makes the unconditional assertion that probing the lachrymal duct for stricture is a failure, and that there is but one successful treatment, and that by a tube devised by himself. The Doctor distinguishes himself by giving us an instrument which seems almost indispensable in certain cases, to be mentioned later. My object is not to condemn his treatment, but to defend probing, which he brands "a failure." Inasmuch as I have never had a failure in an uncomplicated stricture, I must take issue with the Doctor. In all cases of complete stricture, I open up the duct with a knife and follow this with a probe as large as, in my opinion, is justified. Beginning on the second or third day, I inaugurate a series of probings every two or three days, at first, gradually increasing the interval between probings, from two to sixty days, which is kept up for some time after I consider the case well. When the obstruction is incomplete, I seldom use the knife to open up the entire duct, beginning probing at once with the smaller probes, sometimes increasing two or three sizes at one sitting.

The class of cases that seems to me to especially indicate Dr. Taylor's treatment are those stubborn cases characterized by contraction of the skin and mucous membranes. In such cases we often find a tendency to ectropion. These cases are exceedingly tedious.

When there is necrosed bone from sloughing or long-continued suppuration, or injuries, no treatment is effective without first removing the necrosed bone. The cause in every case should be sought and, if possible, removed.

HENRY W. WANDLESS, M.D.

PUBLIC HEALTH.

To be Taught in Tennessee Public Schools.—In addition to the branches in which instruction was given in the public schools of Tennessee, it was in 1895 enacted that physiology and hygiene, with special reference to the nature of alcoholic drinks and narcotics and smoking cigarettes, and their effects upon the human system, shall also be taught as thoroughly as other required branches.

Restrictions upon Sale of Cigarettes. In order to provide for the better protection of the public health, the legislature of the State of Washington in 1895 enacted that it shall be unlawful for any person to sell cigarettes made of tobacco in combination with any substance or material, covering or wrapper, or containing any substance or material other than tobacco, until he shall have obtained a license therefor, and the applicant for such license must make oath, to the best of his knowledge and belief, that the cigarettes intended to be sold do not contain any injurious drug, or other deleterious matter, and that he will not knowingly sell any cigarettes containing any such injurious drugs, narcotic or other deleterious matter. It is also made unlawful to sell any cigarettes to minors under 18 years of age.

Cholera in Sand-Ballast.—The Japan correspondent of the New York *Herald* writes as follows of the possible dissemination of cholera by sand-ballast: "Dr. W. F. Arnold, of the United States war ship Petrel, who was detached some months ago and directed to make a thorough investigation and study of the recent cholera epidemic in Japan, has returned to Yokohama from Shimonoseki. He reports that the quarantine service at Shimonoseki was most excellent, but the bacteriologic research quite indifferent. He got trace of one transport steamer which brought an unusual number of cholera cases from Talien Wan to Japan. She was disinfected no less than four times. This vessel used sand for ballast, and this ballast was not changed during the epidemic. The sand was picked up in India somewhere, just before the beginning of the war, and Dr. Arnold thinks that it had something to do with fostering the disease. He will make a thorough investigation of this vessel's history.

Provision Made in Minnesota for Expenses in Controlling Epidemics—The law of Minnesota relating to the control of infectious diseases was amended in 1895 so that it shall be the duty of the chairman of any town, village, or city board of health which has incurred expenses for the control of infectious or contagious diseases in any such town, village or city to file an itemized statement thereof duly verified, under oath, with the clerk or recorder of such town, village or city, and thereupon it shall be the duty of the town supervisors, or the council of any city or village to audit and pay the said statement, or so much thereof as they deem just and proper, in the same manner as other accounts against such town, village or city are audited and paid. For this purpose, towns, villages and cities are authorized to levy an additional tax, not to exceed one mill on the dollar, of taxable property in any one year. But this enactment is not to apply to any city where provision was already made by law for the payment of such expenses by said city.

Tubercle Bacilli in Milk and Meat.—This subject is strongly handled by Dr. Simonton in an article in the *San José Mercury* of January 18. He calls attention to the fearful statistics of the death rate from tuberculosis in this country and says that as it is a preventable disease it should be terminated. Persons already afflicted should not be allowed to infect others with their sputa drying on sidewalk and step, and whole herds of cattle should be swept out of existence if necessary. He asserts that most of the 18,000,000 gallons of milk used here annually contain germs of tuberculosis, and that 15 per cent. of the cattle in California are already infected. He then makes a vigorous appeal to have the meat inspector and health officers generally, paid a generous salary, in proportion to the vital importance of their task, so that they could act without fear or favor, promptly and energetically. It is "a serious

matter to go into a man's dairy and kill his cattle," especially if he is a friend and patron of the official. The office should be dignified and remunerated until friendship and patronage are considered trifles in comparison with the disease and death the dairyman is scattering boardcast.

Precautions about Sending Tuberculous Patients Away from Home.—One of our religious journals contains an interesting and timely bit of correspondence that goes to show what may often occur when consumptives are sent to certain parts of the partially developed South, without the proper financial provision. Patients are not infrequently sent away, or allowed to go South without funds sufficient for their maintenance while away from home. Some patients are said to go in the expectation that they will be able to get work, when oftentimes there is no work suitable for them to do, and they may be without the strength to do it, even if it is to be found. The inference is inevitable that this "getting of work" for the patient should not be left to a chance, but should be looked into carefully before the journey is undertaken, unless the financial provision is so ample that the patient may not be overtaken by privations if the work is not procurable.

A clergyman in El Paso, Texas, writes to *The Evangelist* asking charitable friends to be careful in sending people there for treatment of pulmonary troubles, to make sure that they have enough to support them while there. The different churches are by no means strong, and find themselves very heavily taxed to support the very many needy invalids sent from other places. Such sick poor, he says, are "unloaded on us every winter by the score." They are expected to find work, but there is no work for them save in very exceptional cases. While disclaiming any desire to be harsh or uncharitable, he says: "If their friends can not support them here, we beg of them not to send them. Keep them at home that they may die of consumption among friends, and not of consumption, plus starvation, among strangers."

Legislation to Protect Health in Minnesota.—Several laws were passed in 1895 by the legislature of Minnesota designed for the protection of the public health. One of them, chapter 199 of general laws, provides for the sanitary regulation of bakeries and other establishments for the manufacture of bread and other food products. It prescribes how buildings therefor are to be constructed. No water closet, earth closet, or privy or ash pit shall be within or communicate directly with the bake room or any other room used in the manufacture of bread or other flour or meal food products, and the sleeping places for workmen shall also be separate and distinct therefrom. Ample toilet facilities apart from the utensils used in the preparation of food are to be furnished, as well as caps, slippers or shoes and an external suit of coarse linen. Furthermore, no person shall work or be employed in or about any bakery or other establishment for the manufacture of food products during the time in which a case of infectious disease exists in the house in which he resides nor thereafter until the local board of health issues a certificate in writing that no danger of public contagion would result from the employment of said person in said establishment. It is made the duty of the state bureau of labor and the boards of health, state and local, to see that the provisions of this act are enforced, while in cities of over 5,000 inhabitants, the common councils may require the owners or managers of such establishments to take out licenses. Chapter 200 requires all dealers, whether wholesale or retail, and others, in slaughtered fresh meats of all kinds, or in fish, fowls or game for human food, or for family use, to protect the same from dust, flies and all other obnoxious, offensive and deleterious insects, vermin or substances, while being transferred from place to place, to their customers, by securely and properly covering same with protectors, either tarpaulins, sheets or other effective covers. Chapter 201 aims to suppress the sale at retail of decayed, tainted and unwholesome plucked poultry and game, particularly by requiring the entrails, crops and all other objectionable and offensive parts removed therefrom. Chapter 202 requires receivers of milk or cream in cans, bottles or vessels, shipped by rail or boat, which are to be returned, to empty same before the contents sour and to immediately wash and air the cans, etc. Chapter 203 relates to the inspection of milk and of dairies and of dairy herds. Chapter 204 is to prevent the adulteration of candy.

A More Aggressive Campaign Against Tuberculosis in New York.—On January 18, the New York City Board of Health made public a report of Dr. Herman M. Biggs, pathologist, and Dr. T. Mitchell Prudden, consulting pathologist of the Health Department, on the subject of expectoration in public buildings and conveyances. Circulars of information have already been published and distributed by the department, and some bacterial diagnostic work has been done by the Bureau under the charge of Dr. Biggs: but the officials feel that the time has come to make another advance. They will recommend that notices be posted in all public places and in all surface and elevated cars in this city, signed by the Board of Health, warning passengers against expectoration upon the floor of those conveyances; and further that similar notices be posted in the stations of the elevated roads, warning people against expectoration upon the platforms and stairs, or on the floors of the stations. The report above referred to says: "It has been for a long time known that the expectoration of persons suffering from laryngeal or pulmonary tuberculosis, pneumonia, influenza or the grip, and from diphtheria, contains the specific germs of these different diseases, and is capable of inducing these diseases in others. There is, furthermore, much evidence that a similar condition exists in certain more readily communicable diseases, such as scarlet fever, measles and whooping cough. In regard to some of these affections, the danger from the expectoration in public places is of course small, as the patients are ordinarily confined to their homes during the infectious period. But this is not universally the case. It has long since been shown that the chief means for the transmission of consumption is the dried and pulverized sputum of persons suffering from the disease. These germs are liable to be gathered on the feet and on the skirts of women, and taken into private houses, where the most perfect ventilation will not stay their evil effect. Expectorating in public places should be abated, as any other public nuisance which is brought to the attention of this department. That it is a habit and not a necessity, is clearly enough shown by the large number of men who are free from it, and the insignificant portion of women who practise it. There seems to be no good reason for the longer sufferance by the mass of people of the carelessness and the negligence of the few. We believe that this is a matter of great importance, and that on this ground alone it demands the interference of your Board. We believe that the time has now arrived when the people of the city of New York will heartily support the adoption of such sanitary measures as may seem necessary and expedient for the abatement of this widespread nuisance and source of danger."

The "Sacred Breath Cube" for Factories. Ventilating Fans in Laundries.—The *Medical Press and Circular*, January 8, states that a new law as to factories went into operation in Great Britain, at the beginning of the year 1896. The cubical air-space is, by the new act, moderately increased, but can not be said to be extravagantly high, but from a general sanitary standpoint the *Press* concludes that "the new measure constitutes a considerable advance upon all previous enactments of a similar nature. First and foremost the great principle of the prevention of overcrowding in work places has at length been formally recognized by the legislature of this country. The Act provides that a factory or workshop shall be deemed over-

crowded, so as to be injurious to the health of its inmates, if there be less than 250 cubic feet of space to each person during overtime. At the same time, there is an important rider to the effect that the Secretary of State may modify this proportion for any period during which other than electric light is used, and may as regards any particular manufacturing process or handicraft substitute any higher cubical figures than those mentioned. The necessity for such a proviso in many trades—such as baking—will be at once evident to all who are familiar with industrial processes. Then we find that the powers of the administrative authorities are greatly increased. Thus, a court of summary jurisdiction, meaning in London a police court, may on complaint by an inspector, and on being satisfied that a factory or workshop is in a dangerous or insanitary condition, prohibit the place from being used until such works as are necessary to remove the danger have been executed. This provision will strengthen the hand of the factory inspector to an almost incalculable extent. Adequate penalties are provided for the employment of persons in places injurious to health, or for allowing wearing apparel to be made up, cleaned or repaired in places where there is scarlet fever or smallpox. The last clause is so directly practical, so obvious, and so elementary as a common-sense first step in prevention or the spread of infectious disease, that the only wonder is why it was not placed on the statute book a generation ago. Further important provisions are made in the case of death from accident in a factory or workshop. Notice of occurrences must be given and a full register of them kept by the owner or occupier. A factory inspector must also attend the subsequent inquest, and the Home Secretary is furnished with powers for additional investigation should he think fit. Another most salutary feature of the new bill is that laundries carried on by way of trade, or for purpose of gain, are brought under the control of the Factory Act. In steam laundries fans must be provided to regulate the temperature of ironing rooms and to carry off the steam of wash-houses; stoves are to be separated from workrooms; the use of gas-irons emitting noxious fumes is forbidden; and floors are to be kept in good condition and properly drained. These improved conditions can not fail to confer an immense boon upon a hitherto neglected and oppressed class of workwomen. At the same time it is not a little curious that women engaged in this laborious and unhealthy trade are allowed to be employed for excessive hours of labor. A number of provisions are made with a view to enforcing the duties of employers in the observance of sanitation, of the fencing of machinery, of the affixing of notices, and of the general carrying out of their responsibilities under the Act. In the case of tenement factories we note the practical point that the owner is made responsible in place of the occupier, who if often a man of straw."

The new law is manifestly a step in the right direction and constitutes a notable landmark in the history of factory legislation.

Health Reports. The following health reports have been received in the office of the Supervising Surgeon General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, Jan. 11 to 18, 3 cases, 1 death.
Michigan: Detroit, January 11 to 18, smallpox reported.
Missouri: St. Louis, January 21, 1 case.
Tennessee: Memphis, January 18 to 25, 2 cases.

SMALLPOX—FOREIGN.

Dublin, January 4 to 11, 3 cases.
Glasgow, December 28 to January 4, 3 cases.
London, January 4 to 11, 3 deaths.
Madrid, January 1 to 7, 10 deaths.
Montevideo, December 14 to 21, 1 case.
Nogales, January 11 to 18, 2 cases.
Odessa, December 28 to January 4, 4 cases, 2 deaths.
Rotterdam, January 4 to 11, 2 cases.
Swansea, January 4 to 11, 1 case.
Tuxpan, December 21 to January 4, 2 deaths.
Warsaw, December 21 to January 4, 3 deaths.

CHOLERA—FOREIGN.

Bombay, December 17 to 24, 1 death.
Calcutta, December 7 to 14, 42 deaths.

YELLOW FEVER—FOREIGN.

Havana, January 9 to 16, 5 cases, 2 deaths.
Cienfuegos, January 5 to 19, 2 deaths.
Santiago, January 11 to 18, 6 deaths.
Sagua la Grande, January 4 to 11, 5 cases, 1 death.

BOOK NOTICES.

Miskel, A Novel. By L. M. PHILLIPS, M.D. Franklin, Ohio: The Editor Publishing Co.; New York: Bailey, Fairchild & Co. 16mo, cl., pp. 266. 1895. Price 50 cents.

This is number 2 of the Doctor's Stories, a series of "medical" novels which we are informed will hereafter appear with regularity. The story turns largely upon hypnotism and Hindoo magic. A baby is stolen in Lucknow; the father, an English officer, also abducted. In course of time the custodian of the child becomes a resident of an Ohio town, where she astonishes the good people of that slow but altogether correct village by her wealth, her beauty, her accomplishments and her magic, and knowledge of the hypnotic art. She finally hypnotizes and ruins the only bank cashier, and runs a career of astonishing riot which finally takes her East to consult Hammond, Ranney and other neurologic luminaries; but through the doubly diabolic agency of her two Indian servants, who feed her on hasheesh, the prognostications come to naught and she seeks refuge in an inebriate asylum, only to die by the knife of one of the Hindoo assassins. Meanwhile by phenomenal valor, and the courage and ability of a self-sacrificing friend, the officer is restored to his family and everybody is happy forever afterward. On the whole it is a clever story.

Food Products of the World. By MARY E. GREEN, M.D. Edited and Illustrated by GRACE GREEN BOHN. Chicago: The Hotel World. 16mo, cl., pp. 248. 1895.

We can not have too many books on this subject, so long as man must be fed and depends upon food products for his supply. When the time comes that we shall be fed by some new and savory synthetic compound so highly concentrated that only a few drops will suffice for our daily nourishment, perhaps the study of food may lose its interest for us; but then as there will be no need for a digestive apparatus, it must be more or less speculative, regarding the particular mental pabulum that may interest the coming chemic race. Be that as it may, "while we live, let us live," and Dr. Green's book will be found a mine of information on foods. But the mine is intrinsically attractive, and one is apt to linger long over its developments.

The vast information possessed by the authoress is so charmingly placed at our disposal in this little book, that the literary as well as the gastronomic gourmet must be satisfied.

"The subject matter in this book," says the preface, "was originally published in a series of magazine articles begun just after the close of the World's Columbian Exposition. The fact that at the Exposition was gathered the most complete and cosmopolitan array of food products ever displayed, is sufficient apology for the frequent allusions made to these exhibits throughout the book." The hygienic and nutrient values of foods are well and clearly stated, and we have no hesitation in placing this at the head of recent works on foods. Its style is agreeable and there are few instructive works that can be read with more pleasure. The authoress is patriotic to a degree, and the great Exposition is a prolific theme. Hear her:

"Nothing equaling the agricultural displays of our States and Territories was ever seen before. The wheat lands of Canada and our own great West sent their contribution in cereals of superior quality and statistics of immense production. Corn was there in all its glory of waving leaf and tassel as decoration upon the booths, and in its richness of yellow and white, as the exhibit proper. The fruit belts of California, of our Middle States, of the South and East were

represented by such displays as would have graced the banquet-board of an Epicurus. Apples, pears, plums of royal purple and gold were there, grapes worthy to crown the temples of a Bacchus, and oranges from the west and south, the golden apples of our own Hesperides."

Addresses, Papers and Discussions in the Section on Surgery and Anatomy at the Forty-sixth Annual Meeting of the AMERICAN MEDICAL ASSOCIATION, held at Baltimore, Md., May 7–10, 1895. Chicago: AMERICAN MEDICAL ASSOCIATION PRESS. 1895. Price $1.

This Section book of the ASSOCIATION contains the work of the last Section meeting, and it is regretted that owing to the failure of the stenographer who had been engaged for reporting the discussions, no discussions in these Sections were available. The stenographer was engaged on recommendation of some of our well known members, and it was not known until after the meeting that he was wholly incompetent, too late to remedy the error. Therefore the papers have been published as delivered without the discussions. There are several among them that will be of permanent value to surgical literature. The contributors to the volume include the names of Howard A. Kelly, W. K. Otis, F. C. Valentine, John B. Deaver, Nicholas Senn, John B. Roberts, Christian Fenger, E. B. Davis, J. McFadden Gaston, De Forrest Willard, J. B. Murphy, W. B. De Garma, Henry O. Marcy, B. Merrill Ricketts and others. The chairman, Dr. Jos. Ransohoff, is to be congratulated on the excellence of the program, and the general appearance of the volume.

NECROLOGY.

JAMES A. BLANCHARD, M.D., of Brooklyn, who for fifteen years was superintendent of the Inebriates' Home, died suddenly January 8, at the institution where his duties had kept him in a position of more or less professional isolation, ever since 1881. Dr. Blanchard was born in Norwich, Conn., fifty-five years ago, and studied in the schools of his native town until 1858, when he settled in Brooklyn and took up the study of medicine and surgery at the College of Physicians and Surgeons, in New York, from which he graduated in 1867. He then practiced his profession in this city until 1878, and in that year received the appointment of assistant superintendent of the Kings County asylum for the insane at Flatbush. His success, while in private practice in the treatment of mental diseases, was followed by a similar success in the management of the insane poor; and in 1881 he was made superintendent of the Inebriates' Home at Fort Hamilton, a position which he held until the year of his death. He was during nearly all these years, handicapped in being connected with this semi-political retreat, against which from time to time there would be a clamor for investigation, but against which the better class of citizens have in vain protested. Special legislation, even, has seemed powerless to effect any reform. During the war of the Rebellion, Dr. Blanchard enlisted in the Twenty-third New York Volunteers, and for valuable services rendered was promoted to the medical corps. At the end of a year he was obliged to leave the service on account of ill health and coming home resumed his medical studies. He belonged to the Hamilton and Crescent Clubs of this city, the Twilight Club of New York, the Kings County Medical Society and the Physician's Mutual Aid Society. His wife and one daughter survive him. The cause of his death was an attack of pneumonia, of two weeks' duration, culminating in cardiac syncope.

KENNETH N. FENWICK, M.D., of Kingston, Ontario, died January 21, in consequence of pyemia following an operation done a few days before on an eight-year-old child. He was professor of the Institutes of Medicine at the Royal College of Physicians and Surgeons, and a member of the attending staff at the General Hospital at Kingston. He was an ex-vice-president of the Ontario Medical Association. In addition to his medical degrees of Canadian origin, he was a member of the Royal College of Surgeons of England.

F. R. DYER, M.D., of Ottawa, Ill., January 25, aged 43.——Albert Dart, M.D., Goshen, Ohio, January 15, aged 94.——H. N. Mackey, M.D., of Morgantown, W. Va., January 21, aged 67.——Benjamin Cory, M.D., of San Jose, Cal., January 16, aged 74.——W. D. Morehouse, M.D., of Wauwautosa, Wis., January 17, aged 64.——M. A. MacOwen, M.D., of Utica, N. Y., January 19, aged 76.——A. W. Lozier, M.D., of New York, January 14.

MISCELLANY.

Access to College Laboratories.—The members of the Académie de Médicine have placed on record their unanimous desire that every medical school and college should have a special experimental laboratory for the study of bacteriology, accessible to all the physicians and druggists of the place.

Serum by the Quart.—A Bordeaux physician has recently vaccinated some cases of variola with serum from a vaccinated young cow, injected hypodermically in quantities varying from one-twentieth to one-fiftieth of the weight of the patient. These large quantities produced no inconvenience, but were followed by immediate recovery. One and one-half liters were injected in the course of an hour in one case.—*Sem. Méd.*, Jan. 15, 1896.

Tuberculosis in a Penal Institution.—The Charities' Board of Kings County, New York, have voted to fit up a separate ward in the hospital attached to the Kings County Penitentiary for the reception of patients suffering from consumption and pulmonary diseases. The new ward will be located where the ironing and drying room used to be. It was lately moved into the laundry building. This improvement is made upon the recommendation of the physician attached to the penitentiary. There are at present twelve convicts whose condition makes it expedient to remove them to such a ward.

Authorizes Incorporation of Medical Societies.—A law was passed in the State of Washington in 1895 which provides for the incorporation, by two or more persons within that State, of associations for the prosecution of scientific or medical purposes. Such corporations can make their own by-laws, hold real and personal estate, hire or erect buildings for their own accommodation, and may receive and hold in trust, or otherwise, funds received by gift or bequest, to be devoted to the purposes for which they are organized. Preëxisting societies can come under the provisions of the law, if they desire to do so.

The International Scientific Language.—The *Archives Cliniques de Bordeaux*, December, 1895, has a complimentary notice of Dr. Hamilton's address to the American medical editors on this subject. We translate a few lines: "It always reminds us of that incident in Grecian history when the generals were to elect a commander-in-chief, and each man voted for himself in the first place, but the second choice was unanimously in favor of Themistocles. Each man wants his own mother tongue to be adopted for the international scientific language, but the second choice is invariably in favor of French. Dr. Hamilton, however, is so liberal as to place French in the first place, which is remarkable, coming from an American." It concludes by endorsing all his remarks in regard to Greek, Latin and other languages.

William H. Thorndike Prize Fund.—Mr. Townsend W. Thorndike has given $5,000 to the Harvard Medical School to found the William H. Thorndike Prize Fund in memory of his father. From the interest of this fund a prize of $200 is to be given annually to the author of the best essay on some subject in any branch of surgery. The students of the Harvard Medical School and graduates of under five years' standing of any recognized medical school shall be eligible in competition for it.

According to the wishes of the donor, should the principal increase to such an amount as should be considered sufficient to warrant the offering of a second prize of lesser amount from the interest of the fund, such a second prize is to be established, to be known also as the William H. Thorndike Prize.—*Boston Med. and Surg. Jour.*

A Bit of Pseudo-science, or the Early Photographic Diagnosis of Variola.—The following amazing paragraph is taken from an American journal that covets the name of being a teacher of science. The writer has evidently forgotten to ascertain what is the length of the incubative period of variola:

"A Manchester photographer relates that he recently took a photograph of a child who was apparently in good health and had a clear skin. The negative showed the face to be thickly covered with an eruption. Three days afterward the child was covered with spots due to prickly heat. The camera had seen and photographed the eruption three days before it was visible to the naked eye. It is said that another case of a similar kind is recorded, where a child showed spots on his portrait which were *invisible on his face a fortnight previous to an attack of smallpox.*"

The Return of the African Explorer, Dr. Donaldson Smith.—The December 20 issue of the *Science* contains the following news item: "Dr. Donaldson Smith, who left England in the summer of 1893, with the object of exploring Lakes Rudolph and Stephanie, has just reached England. Since February, 1894, nothing had been heard of him, until a telegram from Aden, at the beginning of November, announced the success of the expedition, and the arrival of Dr. Smith at that place. Dr. Smith will read a paper before the Royal Geographical Society next month, and in January will return to America, where an account of his travels will be published." Dr. Smith is, we are informed, a Philadelphian by birth, and a graduate from the University of Pennsylvania about six years ago. The lakes above mentioned are in an almost unknown territory, lying northeast from the Victoria Nyanza, in Eastern Equatorial Africa.

Lupus of the Tongue.—The tongue is neglected by the specialists; it does not belong to dermatology nor to laryngology, and consequently has little or no literature of its own. Lupus of the tongue is extremely rare, and an indolent trouble that is scarcely noticed. Nearly every case noted was discovered while an examination was being made for some neighboring affection. Dr. Spire sums up all the known cases on record, fourteen in all, from Bazin and Virchow in the sixties to his own experience, in an article in the *Archives Cliniques de Bordeaux*, December, 1894. In every case there were similar lesions on neighboring organs, and the lupus had the same appearance in all. In treating the case the characteristic nodule must first be destroyed. Dr. Moure paints it with phenic glycerin. Leloir applies a salicylized paste; Volkmann's curette may bring on a hemorrhage; Michelson used successfully a galvanocauterizing bath, but of all methods the author advocates ignipuncture, as being harmless, rapid, not painful after the part is treated with cocain, and very satisfactory in its results.

Infective Stomach Hemorrhages of Angiocholitic Origin.—Dr. Rondot's paper read before the French Congress of Medicine, August, 1895, and given at length in the *Archives Cliniques de Bordeaux*, December, 1895, is an interesting study of two unusual cases of hemorrhage of the stomach, from which he concludes that suppurative inflammations of the biliary ducts, such as an areolar abscess of angiocholitic origin or suppurative cholecystitis, may be accompanied by hematomesis with pain, thus simulating the symptoms of simple ulcer of the stomach. These gastric hemorrhages may appear in the course of biliary affections which manifest their presence by fever, enlarged spleen and the phenomenon of endocarditis and myocarditis. They seem to progress by feverish rushes, with pains foreign to the disease known as Cruveilhier's. These may be followed by periods of deceptive calm, during which the latent trouble reveals itself by symptoms of endocarditis and hypertrophy of the spleen. The persistence of the cause explains the return and the dangers of the different symptoms. If they do not produce death directly, they may give place to symptoms of an infection with every phenomenon of infective endocarditis with hyperthermia and rapid degeneration of the muscles of the heart.

Reciprocal Medical Registration Lacking in the Dominion of Canada.—The *Montreal Medical Journal*, in its report of the proceedings of the last meeting of the Canadian Medical Association, emphasizes the fact that there is still wanting in the Dominion an equitable and fair intercolonial medical registry. The *Journal* points out the desirability of an early settlement of this question, for it almost prejudges every application that is made to the British General Medical Council for a reciprocal registration with the mother country. There is so much at stake, the *Journal* thinks, that the matter should be pressed forward to its issue. The *Journal* further says:

The committee appointed at the last meeting of the Association to look into the question of inter-provincial registration expressed their regret that by the system which at present obtains, a graduate of medicine entitled to practice in one Province is not free to exercise his functions in all the Provinces in this large but sparsely settled Dominion, that this condition of things prevents the names of medical practitioners in this Dominion being placed on the British register, becoming thereby British practitioners. This latter is a boon which the council of Great Britain has more than once signified its willingness to grant. To secure these ends it is considered most desirable that a uniform standard of medical education for the whole Dominion be established. In order to effect this purpose it is suggested that the Secretary be instructed to communicate with the various provincial councils before the next meeting, asking that each council discuss the position and if possible appoint one or more delegates to a Dominion committee for the purpose of adjusting a suitable curriculum to carry out the suggestions herein, and that such committee be requested to forward its findings to the secretary of the association before the next meeting.

Somatic Illumination by Electricity. An Electrical Oscillator.—Two electrical discoverers report about simultaneously new medical and surgical uses for an extremely powerful electrical light. One of these, the claimed surgical application of such light, has been made by Rontgen, of Würzburg. The following condensed statement on this subject is taken from the *Medical Press and Circular* for January 8:

"The news of a remarkable discovery in photography is reported from Vienna. Briefly, it consists in the discovery of a new conductor of light. Professor Rontgen, the well-known professor of Würzburg University, has succeeded in photographing metal weights shut up in a wooden box, without showing anything of the casing on his negative. He is also said to have photographed the bones of the hand, all the soft parts being invisible. He photographs by means of light of an exhausted Crookes' tube through which an inductive current is passed. The discovery appears to be so far that the rays in question penetrate wood and flesh, but not bone or metal. It is surmised that photographs of the kind mentioned may have a valuable practical application in the discovery and location both of fractures and of bullets. If this discovery be sustained it will certainly take a first place among the many marvels of this scientific age. Those of our readers who are versed in electrical research may have already heard of Professor Rontgen's interesting researches."

A second claim, that of the American electrician Nicola Tesla, is laid that a strong electrical light can be developed powerful enough to penetrate the body-tissues and destroy certain pathogenic bacilli. He believes that he has produced an artificial light which, under certain conditions, is powerful enough to penetrate the human integuments. The last named was taken up some months ago by a physician in Vienna, who

it is alleged has discovered that by its use the bacilli of tuberculosis may be destroyed. By its means the most remarkable medical cures may become possible.

Another discovery by Tesla is that of an electrical oscillating machine for localized treatments and for general passive exercise. In an interview with a New York *Herald* reporter, Tesla gives the following explanation:

"The oscillator is a platform, which produces a number of more or less violent mechanical vibrations. For persons whose systems are in need of exercise this is said to be particularly useful. Force of movement can be given to the oscillator equal to the exercise or shaking up of the system which could be obtained by walking or riding for half an hour or even an entire day. These results are obtained without the fatigue which would result were the exercise taken in customary ways. These conditions are brought about through the use of electricity, powerful but minute electric shocks being rapidly distributed through the system.

"Mr. Tesla intends making several oscillating machines and placing them in the hands of certain physicians or medical institutions for the purpose of having their usefulness positively determined."

The Pithecanthropus Erectus.—In *Science* for December 20, Dr. D. G. Brinton gives his editorial review of the newest facts regarding the prehistoric man from Java. This remarkable find of the Dutch surgeon, Dr. Dubois, of a creature considered by him to be intermediate between man and the apes, has been the subject of wide discussion during the past year. Dr. Brinton says:

"So many have been the articles for and against the accuracy of his statements and conclusions, that the Dutch government sent for him to come in person and bring all his specimens to the International Zoölogical Congress in Leyden, in October last. He punctually appeared, with a large number of mammalian bones from the formation in which the Pithecanthropus was found, and an additional tooth of the animal itself. The geological experts present decided that the various bones indicated the oldest pleistocene or else the youngest pliocene. The anatomists expressed themselves about the skull, teeth and femur of the alleged 'missing link.' Professor Virchow, probably the most conservative, maintained that the bones were of an ape; but an ape generically distinct from any known; and if the skull and femur belonged to the same individual, then it was an erect ape, walking like a man; but he would not acknowledge that it bridged the gap between the anthropus and the anthropoid. Practically the same result was reached by the eminent French anatomist, Dr. Manouvrier. He studied the originals in the possession of Dr. Dubois; and he declares there can be no doubt that in them we see the remains of a creature intermediate between man and the ape, walking erect, with a cranium like that of the gibbons, but much larger than any existing gibbon. The conclusion is indisputable that in the Pithecanthropus we have an animal higher than the highest ape and lower than the lowest man."

A Defense of Doctor Jameson.—The *British Medical Journal* of January 11 contains the following defense of Dr. Jameson, whose operations in South Africa have been the subject of much comment:

"Nothing in the present crisis is more remarkable than that, through the general voice of national lamentation that has gone up about this miserable business in the Transvaal, the note of personal regard and even admiration for the man who has been the leader in it has made itself loudly heard. Hard things are being said of others; of Dr. Jameson the bulk of his countrymen simply refuse to believe that his misguided action was prompted by any other thought than the wish to save those whom he deemed it his duty at all risks to rescue from what he considered to be a position of imminent and deadly peril. This tenderness for a man who in the eye of international law is a freebooter, and who has committed the kind of mistake which Napoleon described as worse than a crime, will easily be understood by those who knew him before he had any thought of forsaking the peaceful career of medicine to follow in the footsteps of Cortes and Pizarro. As several more or less inaccurate accounts of Dr. Jameson's early career have appeared in the general press, the following particulars may not be without interest: He is now just 43 years of age. Though Scotch by birth, as far as his medical education is concerned he belongs wholly to University College. He entered that school in 1870, became a member of the Royal College of Surgeons in 1875, and graduated as M.B. and B.S. in the University of London in the same year. He took the degree of Doctor of Medicine in 1877. His career as a student was a distinguished one, and he held the posts of house surgeon under the late Prof. John Marshall, and of house physician under Sir Russell Reynolds. He was afterward appointed resident medical officer to University College Hospital, but his period of office was interrupted by a voyage of some months to the United States, where he went in charge of a patient, and was cut short by the fact of a good opening for practice presenting itself at Kimberley. As an example of his energy of character it may be mentioned that within a day or two of the offer reaching him he began to prepare himself for his new life by taking riding lessons at the Albany Street Barracks. His subsequent career is known to all men. As a young man Dr. Jameson gave evidence of the same personal magnetism which has so endeared him to all sorts and conditions of men. To his intimates among his fellow students he was 'Jimmy' as he is now 'Dr. Jim' all over South Africa. He was a man of the most generous instincts. If impulsive, there was nothing ignoble about him. There was no taint of selfishness in his nature, and he was simply incapable of meanness or deceit. No one who knew Jameson, as men know each other in the unrestrained intimacy of fellow studentship, could for a moment believe that he would consciously have lent himself to any act of treachery or disloyalty. His professional brethren are still proud of him, and assuredly will not condemn him unheard."

Practical Notes.

Abscess Following Injections of Benzoate of Caffein.—The *Sem. Méd.*, Jan. 15, 1896, records a case of pneumonia treated with subcutaneous injections of benzoate of caffein, where abscesses followed at the spots where the injections had been made. The pus of the abscesses contained pneumococci in a pure state.

Rectal Medication.—Dr. Mastboom, of The Hague urges the profession to pay more atttention to this form of medication and thus lift some of the burdens from the stomach. He has obtained exceptionally fine results with salicylate of soda in cases of grippe and rheumatism, as also with creosote, antipyrin, bromids, iodids and arsenic. He uses small doses, not more than 15 gr., well diluted and warmed.

Bronchitis and Pneumonia Produced by Ether.—Anesthesia by means of ether is still vigorously combatted by some physicians. Among them Mickulicz, who noted three cases of asphyxiation in eighty cases where it was used. But Grossmann has observed 250 cases at Dr. Landau's clinic in Berlin, without a single complication, and he writes to the *Deutsch. med. Woch.*, No. 29, 1895, to call attention to Landau's method of placing the head of the patient in such a way, with the corner of the mouth open, that the mucous and saliva run out of themselves, and are not drawn in with the breath to produce strangulation or those rhonchi which give rise to the suspicion of lung or bronchial inflammation.—*Rev. Internat.*, Jan. 10, 1896.

Treatment of Chronic Endometritis by Cauterization with Steam.—This method of hemostasis suggested by Professor Sneguirew of Moscow, a year or so ago, has been successfully employed by Dr. Panecki, of Dantzic, in intra-uterine cauterizations, which are described at length in the *Semaine Médicale* of January 15, 1896. He uses a simple heater supplied with a thermometer. It fits over an alcohol lamp which boils the water. The steam is introduced into the vagina through a rubber tube and catheter, when the thermometer shows a temperature of 100 or 120 degrees for severe cases. As the lining becomes cauterized the parts near the opening turn white, and drops of a reddish liquid fall from the vagina. When about a teaspoonful of this liquid has accumulated, the lamp is extinguished, and a tampon of medicated gauze inserted. The operation does not require an assistant. It should be repeated at intervals of eight to ten days. It affords immediate relief in cases of catarrhal endometritis and is followed by marked improvement in this usually obstinate trouble, which differs from fungous hemorrhagiparous endometritis by its hypersecretion without menorrhagia.

Syphilis of Epiglottis.—At a recent meeting of the Berlin Medical Association, Dr. Hansemann described a new syphilitic symptom hitherto not recognized as such, although it is of frequent occurrence. It is an inflammatory condition of the epiglottis, commencing at the extreme root of the tongue and working outward. The inflammation causes retraction of the epiglottis, which in time becomes anteflected and even doubled. In the autopsy of fifty-five cases with unmistakable indications, Dr. H. noted twenty-five with the epiglottis anteflected, thirteen shriveled and seventeen normal. In five cases the epiglottis was anteflexed without any other indications of syphilis, although atrophy of the root of the tongue was present in one case. As it is not infrequently important, to be able to determine definitely the presence of constitutional syphilis at an autopsy, this condition of the epiglottis may well support the suspicion of syphilis.

Treatment of Diabetes.—At the same meeting Dr. Hirshfeld made a plea for individual treatment of cases of diabetes, as many intercurrent disorders cause the secretion of sugar to increase or diminish and different patients are affected differently by the same drugs as he explained in detail. The secretion of sugar diminishes in all patients with the withdrawal of carbohydrates, but this effect occurs very soon in some and tardily in others. This diminished glycosuria is not, however, an improvement in the disease, as many patients have serious troubles, especially coma, even with a longer continued and almost exclusive meat diet. The beneficial result of this diet seems to be a partial inanition because the consumption of the tissues is not covered. This deficient nutrition, as well as a too abundant diet, affect patients differently. Dr. Hirshfeld does not distinguish between curable and incurable diabetes, but considers them all phases of one disease.—*Deutsche Med. Wochens.*

Fever as a Factor in the Evolution of an Infective Disease.—At a recent meeting of the Académie des Sciences, M. Cheinisse described some experiments he had been making to determine the exact rôle played by the fever in the evolution of an acute disease. He selected infection from staphylococci, as the disease most easily studied and followed. His experiments were suggested by observing the effect of painting the skin with guaiacum, the new method of lowering the temperature. He found by his experiments that the suppression of the fever produced by painting with guaiacum, causes the disease to assume a virulent form. It resulted in the death of the animals thus painted, in twenty-four to forty-eight hours, from virulent septicemia, forestalling the formation of lesions. In the animals infected without further treatment the disease progressed to a fatal termination in two to four weeks, resulting in multiple abscesses in the kidneys, liver and heart (general purulent infection). He is convinced that this result obtained by painting animals affected with fever with the guaiacum is certainly due to the lowering of the temperature, and not to the act of painting, nor to any toxic action of the guaiacum.—*Sem. Méd.* Jan. 15, 1896.

Serotherapeutics of Tuberculosis.—Since the Tuberculosis Congress of 1893, Messrs. Babes and Proca, who read a paper there, have been experimenting with dogs, sheep and asses, inoculating them with tuberculin and also with dead bacilli that have served in the production of tuberculin, as they found this combination more effective. They found that tuberculin would cure tuberculosis under certain conditions, if treatment was commenced very soon after infection. But it could be cured with much greater certainty by injections of serum commenced several days after infection and repeated several times, especially if serum used is taken from animals that have been treated with both tuberculin and dead bacilli. The latter after being removed from the tuberculin and after having passed through the body of the animal seem still to retain a certain active principle which, without producing the fever characteristic of tuberculosis, still reproduces the local lesions similar to the pathologic products of the live bacilli. The accounts of their innumerable experiments was presented to the Académie des Sciences at the meeting of January 6, and is reviewed at some length in the *Semaine Médicale*, Jan. 15, 1896. One fact they insist upon is that the doses of serum must be comparatively large. Small doses are insufficient and only aggravate the disease.

Diphtheria Sine Antitoxin.—In the *New York Medical Journal*, Dr. O. B. Douglas, a specialist of note in that city, writes that he is among those who have not yet been converted to the new remedy. He advocates local treatment, as well as a faithful and moderate medication. He says: "In treating diphtheria and all acute inflammations of the throat, mild medicines given often will serve you far better than harsh and heroic treatment at long intervals. I do not believe that antitoxin has come to stay. I know of no surer way to cure diphtheria than to attack it *in situ*. My method which has given best results is to begin at the earliest stage possible, and give the following medicines with unfailing regularity:

No. 1.

℞ Tinct. aconiti		gtt. xx	1.20
Tinct. belladonnæ		ʒ ss	2.00
Glycerini		ʒ iv	16.00
Aquæ gaultheriæ		ʒ iv	120.00

No. 2.

℞ Potass. chloratis			
Sodii bromidi	āā	ʒ ss	2
Glycerini		ʒ ss	15
Tinct. ferri chlo		ʒ ss	2
Aquæ	ad	ʒ iv	120

Dose: Half a teaspoonful for an adult.

These are to be given alternately every half hour, thus bringing the doses fifteen minutes apart. This frequency may seem severe upon the patient who gets little sleep during the first twenty-four hours, but we have a severe antagonist to combat, and must not relax our warfare until we conquer, which I expect to do with almost as much certainty as I should in a case of measles. In addition to Nos. 1 and 2, I should always use a spray, often and freely, composed of twelve grains of carbolic acid in four ounces of lime water. All these preparations are agreeable to take. I give liquid nourishment freely, milk being ordinarily best; also whisky, sparingly at first, but sufficiently to get the desired effect as a tonic. Bichlorid of mercury may be of service sometimes. Intubation or tracheotomy is to be resorted to if necessary.

Hospital Notes.

MINNESOTA'S FOURTH HOSPITAL FOR THE INSANE.—In 1895 a law was passed in Minnesota creating a commission to locate, acquire land and prepare plans for a fourth hospital for the insane. Among the requirements was that it should be as near as possible to the cities of St. Paul and Minneapolis. Provision was also to be made for a separate ward for insane criminals. And the commission was to consider and report upon the advisability of adopting the cottage plan and methods for this institution.

THE ANNUAL REPORT of the Baltimore Presbyterian Eye and Ear Hospital, shows that 3,000 operations were performed during the year.—The annual report of the Provident Dispensary Association, at Rochester, N. Y., shows that 1,119 patients were visited, and 1,808 prescriptions dispensed.——By the will of Mr. J. C. Kyle, of Topeka, Kans., $10,000 is left to the Christ Hospital of that city.——The Waukegan (Ill.) Hospital Association held a meeting January 14.——The fifteenth annual report of St. Joseph's Hospital, at Omaha, Neb., shows that 750 patients were treated in that institution during the past year.——The pesthouse at Elizabeth, N. J., was destroyed by fire January 20. Loss $1,000.——The Syracuse, N. Y., Dental Society is agitating the subject of a dental hospital in that city.

Society Notes.

ANNUAL MEETING.—The Twelfth Annual Meeting of the Fifth District Branch of the N. Y. State Medical Association will be held in Brooklyn on Tuesday, May 26, 1896. All Fellows desiring to read papers will please notify E. H. Squibb, Secretary, P. O. Box 760, Brooklyn.

THE NEW YORK COUNTY MEDICAL ASSOCIATION.—At its annual election held Monday, January 20, this association elected the following officers: President, Joseph E. Janvrin, M.D.; Vice-President, Herman J. Boldt, M.D.; Recording Secretary, Brynberg Porter, M.D.; Corresponding and Statistical Secretary, Nathan Gross Bozeman, M.D.; Treasurer, John H. Hinton, M.D.: For Member of the Executive Committee, for four years, John Shrady, M.D.

MILWAUKEE MEDICAL SOCIETY.—The annual meeting of this society was held Tuesday, January 14. The following officers were elected for the ensuing year: President, Dr. W. A. Batchelor; Vice-Presidents, Dr. Dwight Mereness and Dr. Ralph Chandler; Secretary, Dr. Gilbert E. Seaman: Treasurer, Dr. U. O. B. Wingate; Librarian, Dr. R. N. Hawley; Curator, Dr. A. J. Burgess.

ONEIDA COUNTY MEDICAL SOCIETY.—The quarterly meeting of this society was held in Utica January 14.——The annual meeting of the Toledo, Ohio, Medical Association was held January 10. The following officers were elected for the ensuing year: President, James C. Reinhart; Vice-President, William D. Stewart; Recording Secretary, Charles P. Wagar; Corresponding Secretary, Charles W. Newton; Treasurer, George A. Collamore; Librarian, Samuel S. Thorn; Member Library Board, Otto Landman; Executive Committee, W. C. Chapman, E. C. Bodman, Wm. Cherry, James A. Duncan, C. H. Reed; Examining Committee, H. A. Root, B. Becker, J. Donnelly, Thos. Hubbard, Albert F. McVety.——The regular meeting of the Topeka, Kans., Academy of Medicine was held January 13.

Detroit Notes.

ON MONDAY, JANUARY 20, the Detroit Medical and Library Association listened to a paper by Dr. E. Fletcher Ingals, of Chicago, entitled, "Abscess of the Lung." The paper was discussed at length by Drs. E. L. Shurly and T. A. McGraw.

AT THE REGULAR MEETING of the Wayne County Medical Society, Thursday, January 23, Dr. C. B. Stemen, of Fort Wayne, Ind., presented the general outline and initiatory steps to the formation of the American University, speaking to the point in reference to the medical department of the same. The Doctor told what steps Congress had taken in the matter as to placing the naval and army departments together with certain available material in the Smithsonian Institute at the disposal of the students of this institution. The Doctor emphasized the point that the school would be post-graduate in all departments. In this particular, it would not interfere with any of the schools now in existence; it would simply be a step higher and would work in harmony with all existing institutions. The requirements for a degree in the medical department of this school would require the applicant to hold a B. A. certificate, together with a diploma for four years of study in medicine in some recognized medical school; but what the Doctor especially emphasized, as far as benefits to the profession went, was that the facilities were at hand in Washington for all the original investigation that anyone could desire in our chosen profession, and that these had already been guaranteed, to be placed at the disposal of the students. Dr. Stemen desired to learn the wishes and the wants of the profession in this important undertaking, and secure their coöperation. Dr. E. W. Jenks, in replying, agreed with the essayist as to the good to be derived from the establishment of the university and the importance of the undertaking, but thought the requirement of a B. A. certificate was much too high a standard. Dr. Arthur B. Holmes thought that the standard was a good one; that a man with a B. A. could listen to lectures with more profit, being able to understand what was said much better than one that had not had a classical course. Dr. Hal. C. Wyman did not agree with the high standard required. He said that the farmer boy who was required to care for and keep in repair the farm implements was the one, that having completed his medical education, was able to manipulate the different mechanical appliances much better than his more fortunate colleague that had not had his former experience. Dr. John North, of Toledo, Ohio, spoke with considerable enthusiasm and complimented Dr. Stemen on his great undertaking and on the forethought of Bishop Hurst in making the appointment. Dr. E. T. Millegan and Dr. T. J. Parker commended the project. Dr. Kenneth Gunsolus also liked the idea of the university; but thought that it would not educate the people, and what we particularly needed was legislation by which only graduates could practice medicine.

HEALTH OFFICE REPORT for week ending January 25: Deaths under 5 years 39, total 91; births, male 58, female 56, total 114. Contagious diseases: Diphtheria, last report 27, new cases 7, recovered 10, died 2, now sick 22. Scarlet fever, last report 19, new cases 5, recovered none, died none, now sick 24. Smallpox, last report 3, new cases none, recovered 1, died none, now sick 2.

Cincinnati Notes.

THE MORTALITY for the week ending January 17 gives: Diphtheria 3, measles 4, typhoid fever 8, other zymotic diseases 4; cancer 7, phthisis 20, other constitutional diseases 6; apoplexy 5, bronchitis 11, gastritis 3, heart disease 4, meningitis 7, nephritis 5, peritonitis 2, pneumonia 20, other local diseases 19; violence 3, developmental 10; under 1 year 21; 1 to 5 years 17; all causes 141. Rate per 1,000 20.94. Corresponding week 1895, 117; 1894, 119.

THE STAFF of the Cincinnati Hospital have voted to increase the number of internes four and extend the limit of service to eighteen months instead of twelve.

DR. G. A. BUDD had an exciting encounter with a highwayman last week, in which his refusal to "throw up his hands" resulted in a bullet hole in his hat. The Doctor fired two shots at the robber, who unfortunately escaped.

J. A. BORSE, a Philadelphia drug broker, has been interviewed by Food Commissioner Luebbing regarding the cheap quinin the former has offered for sale; he stated, however, that he had sold none of it in Ohio nor in States which had laws against the sale of adulterated goods.

WHILE DRIVING from Milton to Belleville Dr. C. O. Probst, Secretary of the Ohio State Board of Health, was thrown from a buggy and painfully injured. Dr. Probst was in Milton investigating the recent outbreak of smallpox there.

DR. GILBERT I. CULLEN has been appointed surgeon for the Cincinnati, Jackson & Mackinaw Railroad for this vicinity.

THE OBSTETRICAL SOCIETY, of Cincinnati, at its regular annual meeting, at the Grand Hotel, Thursday evening of last week, elected the following officers: President, Dr. R. B. Hall; Vice-President, Dr. C. L. Bonnifield; Secretary, Dr. E. S. McKee; Treasurer, Dr. G. E. Jones.

DIPHTHERIA is prevailing to an alarming extent in West Alexandria.

AT THE MEETING of the Academy of Medicine held January 20, Dr. G. A. Fackler read a paper on "Some Fatal Cases of Typhoid Fever, with Post-mortem Findings," and reported a case of "Raynaud's Disease." Dr. Max Thorner read a paper on "Autoscopy of the Larynx and Trachea."

CHRIST'S HOSPITAL and Deaconess' Home are to close one floor of the hospital to curtail expenses.

THE CITY PHYSICIANS, of Covington, Ky., have applied to the city for an increase af salary, with the agreement that they will hereafter supply the medicines to the poor in tablet form.

DR. E. JOHNSON.—Considerable interest has been aroused across the river in the case of Dr. E. Johnson. He lives at

Petersville, Ky., and was indicted at the last term of the circuit court because he continued to practice his profession without a certificate from the State Board of Health. Great interest was centered in the case, as it was thought it would determine the fate of other physicians now under indictment. Ex-Congressman George M. Thomas and J. Noel Johnson represented the defense. They contended that Dr. Johnson had fully complied with the law by securing affidavits from old citizens that he had practiced over thirty years; that the certificate was not granted was not the fault of Dr. Johnson, but the result of the arbitrary withholding of the same by the board. Commonwealth's Attorney Sallee took that view of it and dropped the case out of court. Johnson is bringing a $10,000 damage suit against the board.

DR. JOHN PENNOCK GRUWELL, of Alliance, Ohio, a prominent member of the Society of Friends, died January 21 from an attack of la grippe. He was was the oldest graduate of the Medical Department of the University of Pennsylvania.

Washington Notes.

WEEKLY REPORT OF THE HEALTH DEPARTMENT.—The report of the Health Officer for the week ended January 20 is as follows: Number of deaths (stillbirths not included): White, 58; colored, 52; total, 110. Death rate per 1,000 per annum: White, 16.1; colored, 30.8; total, 20.8. Death rate per annum corresponding week last year, 18.8.

SURGEON GENERAL STERNBERG OPPOSES THE CRUELTY TO ANIMALS BILL.—Surgeon General George M. Sternberg has written a letter to Mr. McMillan, chairman of the Senate committee on the District of Columbia, stating his objections to a bill lately introduced in the Senate for the prevention of cruelty to animals. He thinks that the provision requiring those who experiment on animals to hold a license from the Commissioners should be eliminated or modified so as to permit medical officers and others properly detailed for experimental work in any of the departments of the government service to prosecute such experiments without a license. After stating other objections to the measure, Gen. Sternberg concludes as follows: "So far as observation goes, I do not think there is any necessity for legislation upon this subject. In my opinion, it is a mistake to suppose that those engaged in scientific investigation or in teaching physiology are any less humane than the members of the Washington Humane Society, and the passage of an act placing them under the supervision of inspectors appointed by this society would be an unmerited reflection upon them."

DR. KING RESIGNS FROM COLUMBIA COLLEGE.—Dr. A. F. A. King, Professor of Obstetrics in the Columbia University, has tendered his resignation from the staff of the Columbia Hospital, because he would not countenance the unjust treatment of a co-member of the staff by the lay members of the Board of Directors. Dr. King's course is cordially approved by the medical profession in Washington. A prominent member of the directors has asked for an amendment to the by-laws which will preclude any member of the medical staff attending the meetings of the Board of Directors of the Hospital. The result of the tempest now in progress in the hospital is anxiously awaited.

MEDICAL BILL HEARING IN THE SENATE.—At the hearing granted to the members of all medical schools for or against the medical practice bill Dr. Busey spoke for the bill. He said that the statements and declarations which had been made were sufficient in themselves to prove the necessity of a law. The main points favoring the bill were as follows:

1. Laws of like character have been enacted by forty-three States and Territories.

2. Absence of any uniform standard of medical education in this District.

3. Faculty of organizing medical schools in this District without any standard of education.

4. This District is the common rendezvous of charlatans of low grade schools.

5. A uniform grade of qualification will elevate the standard of medical education.

6. It will offer perfection to the community from charlatanry and imposition.

SANITARY EXAMINER APPOINTED.—Dr. G. M. Kober, the typhoid fever expert, has been appointed a medical sanitary examiner in the health department to perform such duties as may be assigned him by the health officer.

MEDICAL SOCIETY OF THE DISTRICT.—At the regular meeting of the society, held on the 22d inst., Dr. Bovee presented two cases of fibroid tumors complicating pregnancy. Dr. McCormick presented a gelatin dressing for use in skin diseases. Dr. W. W. Johnston, chairman of the Committee on Public Health, presented an exhaustive and instructive report. He went into the subjects of typhoid fever, malarial diseases, smallpox, water supply and filtration, sewers and sewage disposal. He gave a complete history of the health of the District during the year of 1895. The report was adopted and a vote of thanks of the society was tendered the Committee. A special meeting of the socity was held at 2 o'clock the same day, to take action on the death of Dr. W. E. Wolhaupter. Suitable resolutions of respect were adopted.

THE PUBLIC SERVICE.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending January 25, 1896.

Surgeon C. A. Siegfried, detached from the "Texas" and ordered to the "Columbia."

Surgeon W. G. Farwell, detached from the "Columbia" and placed on waiting orders.

P. A. Surgeon J. A. Guthrie, detached from the "Texas" and ordered to the "Katahdin."

Change of Address.

Ashmead, Albert S., from 270 W. 43d Street, New York, N. Y., to 205 Franklin Avenue, Norristown, Pa.

Bridge, Norman, from Los Angeles to 100 Grand Avenue, Pasadena, Cal.

Gedge, D. M., from San Francisco, Cal., to Honolulu, H. I.

Joralemon, J. C., from Toledo, Iowa, to Los Argeles, Cal.

F. H. Lawther, from Chicago, Ill., to Oskaloosa, Iowa.

Welch J. P., from St. Johns to Holbrook, Ariz.

Woodburn, F. C., from Ravenswood, Ill., to Indianapolis, Ind.

LETTERS RECEIVED.

Baughman, J. A., Neorga, Ill.; Bell, J. H., Minneapolis, Minn.; Barger, W. T., Cleveland, Ohio; Barr, G. Walter, Quincy, Ill.; Bridge, Norman, Pasadena, Cal.; Braymer, O. W., Camden, N. J.; Birney, E., Greene, Iowa.

Connalt, Churchill, New York, N. Y.; Cunningham, T. N., Princeton, Ill.; Carter, J. M. G., Waukegan, Ill.; Cutter, J. A., New York, N. Y.; Cody, E. T., Chicago, Ill.; Colis, S., Philadelphia, Pa.; Cincinnati Sanitarium, College Hill, Ohio; Chapman, N., Washington, D. C.; Cantrell, G. M. D., Little Rock, Ark.; Cross Bros., Northfield, Vt.

Davis, C. G., Chicago, Ill.; Dann, N. R., New York, N. Y.

Epting, R. B., Greenwood, S. C.; Ewing, F. C., St. Louis, Mo.; Edenharter, G. F., Indianapolis, Ind.

Fletcher, M. B., Cincinnati, Ohio.

Gihon, Albert L., New York, N. Y.; Gardner, R. W., New York, N. Y.; Greene, Chas. L., St. Paul, Minn.

Harrell, R. F., Ruston, La.; Hummell, A. L., Adv. Agency, (3) Chicago, Ill.; Hubbard, Chas., Toledo, Ohio; Hawley, D. C., Burlington, Vt.; Horlick's Food Co., Racine, Wis.; Holmes, Bayard, Chicago, Ill.; Hill, J. A. & Co., New York, N. Y.

Ingraham, C. W., Binghampton, N. Y.

Joralman, J. C., Los Angeles, Cal.; Jones, W. D., Rising City, Neb.; Johnson, H. L. E., Washington, D.C.

Kremers, H., Holland, Mich.; Katharmon Chem. Co., St. Louis, Mo.; Kemmerer, C. T., Eldridge, Ia.

Lewis, G. W., Fremont, N. C.; Lincoln, W. H., Wabasha, Minn.; Lord & Thomas, Chicago, Ill.; Lyon, J. B., Kirkwood, Ky.

Morice, J. H., Philadelphia, Pa.; Mellier Drug Co., St. Louis, Mo.; Mitchell, A. B., Washington, D. C.; Mitchell, T. E., Columbus, Ga.; Morgan, E. A., Maroa, Ill.

Newcome, J. A., Sigel, Pa.; Newcome, W. C., Big Run, Pa.

Orton, J. J., Randolph, O.

Parsons, Dr., Rosby's Rock, W. Va.; Prentiss, S. B., Washington, D. C.; Park, Roswell, Buffalo, N. Y.; Pasteur Anthrax Vaccine Co., Chicago, Ill.; Pollock, R. M., Princeton, Ill.; Pierson, Wm., Orange, N. J.

Quackenbush, E., Portland, Ore.

Rust, C. A., Saginaw, Mich.; Reed & Carnwick, New York, N. Y.; Randall, F. S., Chicago, Ill.; Reed, R. Harvey, Columbus, Ohio; Ridlon, John, Chicago, Ill.; Rhea, A., Marion, Ohio.

Shurley, E. L., Detroit, Mich.; Stearns, F. & Co., Detroit, Mich.; Stillson, J. O., Indianapolis, Ind.; Strong, B. F., Chicago, Ill.; Smith, E. B., Detroit, Mich.

Taylor, H. L., St. Paul, Minn.; Thomson, R. L. (2) Spokane, Wash.; Tuley, H. E., Louisville, Ky.

Underwood, G. B. & Co., New York, N. Y.

White Rock Mineral Spring Co., Waukesha, Wis.; Welch, J. P., Holbrook, Ariz.; Willis, H., Summerfield, N. C.; Wells, W. A., Washington, D. C.; Whitford, Wm., Chicago, Ill.; Woodburn, F. C., Indianapolis, Ind.; Woodward, A. P., San Francisco, Cal.; Winn, J. F., Richmond, Va.; Woodburn, F. W., Indianapolis, Ind.; Woodbury, Frank, Philadelphia, Pa.; Wyckoff, R. M., Brooklyn, N. Y.